ABILITY TO OBTAIN HEALTH CARE – DOES FAMILY COVERAGE MATTER?

by

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ABSTRACT

Recent state initiatives to insure low-income children, such as the State Children's Health Insurance Program (S-CHIP), have done little to assure coverage for uninsured, non-pregnant adult family members. Child and family advocates have argued with little empirical evidence that extending insurance coverage to all family members would not only improve adults' ability to obtain timely health care but their children's as well. The main purpose of this study was to examine the relationship of family health insurance coverage with ability to obtain health care for individuals, particularly children.

This study used data from the first three rounds of the longitudinal Kaiser Survey of Family Health Experiences (K-SOFHE) conducted from October 1995 through January 1998. In 1995-96, nearly one-quarter of insured persons in families with uninsured family members had maintained a relationship with their usual source of care for less than one year compared with only 13 percent of insured persons in entirely insured families. For all insured children, just over three percent with privately insured mothers, 7.6 percent with mothers in Medicaid, and 12.2 percent with uninsured mothers experienced delay in getting care or did not obtain needed health care at all. Of insured children whose mothers had lost health insurance coverage in Rounds 2 or 3, just over eight percent experienced difficulty in obtaining needed health care prior to the loss of coverage. After the mother lost insurance, however, the proportion of these children who experienced difficulty in obtaining health care rose to 14.7 percent, despite the children having retained insurance coverage themselves. Among children whose mothers retained health insurance, the proportion that experienced difficulty in obtaining care actually declined from 3.9 percent to 2.7 percent during the same period. Differences between children whose mothers lost insurance and those whose mothers did not had grown from a non-significant difference before the mother's loss of insurance to 12.0 percent after the loss (p<.001).

Policies that extend health insurance to some family members while leaving others uninsured might have the inadvertent consequence of diminishing the potential effect on ability to obtain timely health care for targeted individuals.

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Chapter 1

Introduction

Despite failed comprehensive national health insurance reform in 1994, extending coverage to uninsured children has been a clear and consistent policy goal over the past decade. As part of the Omnibus Reconciliation Acts (OBRA) of 1989 and 1990, Congress successfully passed legislation that expanded Medicaid eligibility for children in poverty up through the age of 18 by the year 2002.[1, 2] Building on the OBRA provisions with bipartisan support, the 105th Congress enacted the State Children's Health Insurance Program or "S-CHIP" as part of the 1997 Balanced Budget Act. Codified as Title XXI of the Social Security Act, this legislation provides approximately $4 billion per year in new federal funds (more than $40 billion over the next decade) to insure children ineligible for Medicaid and without access to private insurance.[3-5]

While the Medicaid expansions and newly created S-CHIP potentially could provide health insurance to the majority of the 11.3 million currently uninsured children over the coming years, they have done little to cover adult family members who are also without insurance. A recent analysis of the 1997 Current Population Survey (CPS) found that approximately 80 percent or 6.8 million parents of uninsured children were also uninsured in 1996.[6] This finding suggests that lack of health insurance is a shared family problem.

As states look to expand health insurance to children, some are actively developing proposals to extend coverage to uninsured adult family members. Only under certain limited circumstances, however, does the S-CHIP legislation permit states to extend health insurance to uninsured adult family members.[1] As of March 1999, the Health Care Financing Administration (HCFA) has not yet issued any written guidelines for the family coverage "variance" or waiver, which would allow states to implement plans to cover uninsured adult family members of program eligible children. Nevertheless, Massachusetts' CHIP family coverage variance, which subsidizes premium costs for families with access to employer-based insurance, has already been approved by HCFA.[7, 8]

Due to the number of restrictions in Title XXI, many states are looking to the Medicaid program as the best way to leverage federal dollars to provide health insurance to working families.[9] On August 4, 1998 the President announced a new initiative that would give states the flexibility to raise the Medicaid income eligibility levels and provide insurance coverage to more two-parent working families. States also would have the option to cover additional categories of people not otherwise eligible for Medicaid. Moreover, changes in the Medicaid program can occur concurrently with CHIP family variance waivers and independent state initiatives to provide comprehensive coverage to all family members.[7]

Child and family advocates argue that extending health insurance to adult family members (particularly the mothers) of S-CHIP and Medicaid eligible children would not only encourage greater program participation, but also would promote access to care for eligible children themselves. They claim that the integration of family members into one

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[1] Section 2105(c)(3) of Title XXI-State Children's Health Insurance Program reads: Payment may be made to a State under subsection (a)(1) for the purchase of family coverage under a group health plan or health insurance coverage that includes coverage of targeted low-income children only if the State establishes to the satisfaction of the Secretary that-(A) purchase of such coverage is cost-effective relative to the amounts that the State would have paid to obtain comparable coverage only of the targeted low-income children

insurance package and network of providers would facilitate having a regular source of care for the entire family, which would improve the likelihood of timely receipt of health services.[7] Since children's health care utilization patterns closely reflect those of their parents (particularly their mothers), extending health insurance to uninsured adult family members would have the additional benefit of contributing to timely use of care for children as well. Timely use of preventive and on-going ambulatory care would in turn prevent deterioration of health problems and expensive curative care in the future.

Despite assertions by advocates, the relationship between family health insurance coverage and ability to obtain needed care for individuals within the family has not been empirically tested or supported by available research. The elucidation of these pathways would contribute not only to the implementation of S-CHIP and other publicly sponsored insurance programs, but also substantially would inform our understanding of access to health care for individuals within a family-oriented framework. Moreover, as federal and state governments spend billions of dollars to extend health insurance to children, perhaps greater focus on 'family' coverage would be more effective in achieving the explicit goal of insuring eligible children and improving their access to health care.

Therefore, the purpose of this dissertation is to understand better the effect of family health insurance coverage on the delayed or unmet health care needs of individuals, particularly children. Unlike much of the previous research focusing on child access to health care, this study recognizes that most care-seeking decisions for children occur within the family context, and usually are mitigated by the mother. This study also takes advantage of three years of panel data from the longitudinal Kaiser Survey of

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involved, and (B) such coverage shall not be provided if it would otherwise substitute for health insurance coverage that would be provided to such children but for the purchase of family coverage.

Family Health Experiences (K-SOFHE) to assess change in health insurance coverage and access to care over time. The K-SOFHE followed a nationally representative panel of 1,401 American families (3,981 individuals) from 1995-96 to 1997-98 and collected detailed information on the insurance coverage, presence and type of regular source of care, and delayed or unmet health care needs of every member of the family.

Specific Aims

Aim 1 Describe patterns of health insurance coverage within families.

Hypothesis 1.1 Family income, structure, and employment status strongly will predict heterogeneity in health insurance coverage.

Rationale: Eligibility for both public and private health insurance is defined by family characteristics. For instance, not all employers offer health insurance to their workers let alone to dependents of their workers.[10] Low-income, part-time workers in small firms are much less likely to obtain health insurance than higher paid, full-time staff in larger firms.[11, 12] Even if coverage is available to workers, they might not be able to afford family coverage for dependents.[13] Similarly, variation in state income and work eligibility standards for Medicaid coverage might leave children in low-income families insured but their adult caretakers or older siblings uninsured.[14]

Hypothesis 1.2 Child health insurance status and type will be highly correlated with mothers' insurance status and type.

Rationale: Children are dependent on adults for access to employer-based insurance coverage. While not all mothers qualify for Medicaid if their children are eligible, mothers are much more likely to have Medicaid coverage if their children are enrolled in the program than if they are not.[14] Previous research has also shown that a large majority (approximately 80%) of parents of uninsured children are uninsured themselves.[6, 15]

Aim 2 Examine the relationship between health insurance coverage within families and their view of the health care system.

Hypothesis 2.1 Controlling for individual-level health insurance coverage, individuals in families with mixed forms of coverage or uninsured members will hold more negative views about the health care sector.

Rationale: Experiences with health care may differ for families with mixed types of coverage among members, or with members who are uninsured, compared to those with the same coverage for all members. More complex insurance configurations within the family may influence attitudes toward the health care system as well as patterns of care seeking. Negative views of the health care sector are particularly relevant to current outreach strategies that rely on adult family members to enroll uninsured children into publicly sponsored health insurance programs.[16-18]

Aim 3 To examine the relationship between family insurance coverage and access to health care for insured and uninsured individuals.

Hypothesis 3.1 Insured individuals in families with uninsured members will have worse access to and less stable relationships with a primary care source than insured individuals in families with all members insured.

Rationale: The consequences of having uninsured family members might extend beyond the uninsured individual to affect other members of the family. For instance, families with an uninsured member may experience more financial burden related to health care or may have less contact with the health care sector which ultimately influences care-seeking decisions for all members of the family. This is particularly true in the case of children who are dependent on adult caretakers to initiate health care seeking on their behalf. An uninsured parent may have had negative encounters with the health care sector or lack experience negotiating care for herself. Therefore, she might be less able to obtain timely health services for her children.

Hypothesis 3.2 Controlling for child health insurance status and other potential confounders, uninsured mothers will be more likely than insured mothers to experience difficulty in obtaining care for children.

Rationale: A strong association exists between the health insurance coverage for individuals and their perceived ability to obtain timely health care.[19-21] Insured mothers will be more likely than uninsured mothers to be experienced in negotiating the health care sector and use health services for themselves. Since mothers typically initiate health care for their children, their experience with the health care system and patterns of use will predict the timely receipt of care for their children.[22-25]

Hypothesis 3.3 Controlling for child health insurance status and other potential confounders in each round, mothers with Medicaid coverage will be more likely to experience difficulty in obtaining care for children than privately insured mothers.

Rationale: A number of studies have shown that compared to the privately insured, Medicaid beneficiaries are more likely to experience barriers that delay or prevent the receipt of health care entirely.[20, 26] Low-income mothers in Medicaid will be more likely to encounter a variety of subtle barriers to care than privately insured mothers in obtaining care for children.

Chapter 2

Literature Review

The Role of Family in Children's Access to Care

The decision to seek health care occurs in the context of the family. Since children are dependent on their parents and other adult caretakers to seek, consent to, and pay for care, it follows that their health care utilization will strongly reflect a family's pattern of care-seeking.[24, 25, 27, 28] For example, Schor et al studied the extent to which family characteristics influence the types of problems for which care is sought by individual family members.[24] They found that family patterns of use of health care significantly predicted children's use independent of socioeconomic and health status factors. For instance, correlation coefficients exploring the relationship between parents' and children's utilization rates averaged 0.40 for mother-child dyads and 0.27 for father-child dyads ($P<0.0001$). While the overall rates of use of health services by the children were affected by the utilization rates of both parents, the effect of the mother was 2.3 times that of the father.

Historically, women have been the principal brokers of health services for their children.[29] Mothers not only define their children's illnesses and health needs, but they also decide if, how, when, and where to seek care for those needs.[22] Research has demonstrated that a mother's use of health care services is a strong and consistent predictor of her child's use.[23, 30-32] For instance, Riley and colleagues studied the determinants of child health care utilization within a health maintenance organization (HMO).[22] They found that for both white and black children, if their mothers were high users of care, they would have a 41 percent probability of being a higher user of care themselves, while those with a low utilizing mother had only a 17 percent probability of being a frequent user. This strong association of maternal patterns of health care use was minimally affected when controlling for other factors such as maternal mental health status or distress.

Similar patterns of utilization of care for mothers and their children independent of children's health needs have been found for preventive care, sick care, and total volume of physician care.[30, 32, 33] While these findings underscore children's dependence on adult caretakers, especially their mothers, for using health services, they do not directly address the role of parental health insurance status in determining timely or delayed use of health services for children.

Health Insurance Coverage and Ability to Obtain Health Services

A large number of studies have shown that health insurance is a strong predictor of health service use for both children [33-38] and adults.[19, 21, 39-44] A recent study by Newacheck et al. found that uninsured children were more than three times as likely as insured children to report going without at least one needed health-related service (22 percent vs. 6 percent) and six times as likely to go without any needed medical care in the previous year (6 percent vs. 1 percent).[38] Lack of health insurance can also have serious consequences for health. For instance, a study of Maryland and Massachusetts hospital discharge data from 1987 by Weissman and colleagues found that in both states, uninsured patients with malignant hypertension had twice the rate of avoidable hospitalizations than the private insured.[43] Also, uninsured patients with diabetes in

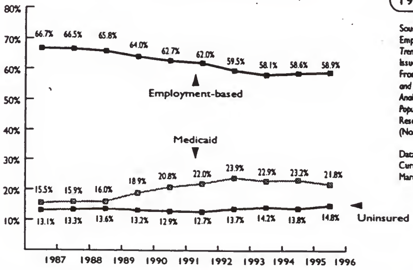
Massachusetts had nearly three times the rate of hospitalization than their privately insured peers.

Given health insurance's important role in improving access to care and health of the population, current trends in health insurance coverage are worrisome. Analyses of the CPS has shown that the percentage of the non-elderly population with employment-based health insurance declined from 69.2 percent to 63.8 percent between 1987 and 1995.[45] Loss of employer-based health insurance, however, has not been uniform across the entire population. For example, persons in families with incomes below 200 percent poverty experienced a much sharper decline in private health insurance coverage than persons in wealthier families.[45] Ethnic minority groups, particularly Latinos, were also much more likely to lose employment-based insurance than their non-Latino, white peers.[45-47]

Individuals can have employment-based health insurance through their own employer or through a family member's employer as a dependent. In 1987, 35.4 percent of the non-elderly population had private insurance as a dependent, but by 1995 that proportion had dropped to 31.3 percent.[45] While the rate of dependent coverage declined for all income classes, those at the bottom of the class hierarchy once again lost the most ground. For non-elderly individuals with family incomes below 133 percent poverty, the proportion with private, employment-based health insurance coverage as a dependent decreased from 17.3 percent in 1987 to 10.2 percent in 1995.[45] These trends are particularly important for children since they are typically covered as dependents under their parent's employer-based coverage. As shown in Figure 1, children were especially vulnerable to loss of private, employer-based health insurance coverage; over two thirds

(66.7 percent) of children in the U.S. had employer-based health insurance in 1987, but by 1996 this proportion had dropped to 58.9 percent.[45, 48]

FIGURE 1 TRENDS IN HEALTH COVERAGE FOR CHILDREN 1987 • 1996



Sources:
Employee Benefit Research Institute, *Trends in Health Insurance Coverage*, Issue Brief (No. 187) 1997.
Fronstin, P., *Sources of Health Insurance and Characteristics of the Uninsured Analysis of the March 1997 Current Population Survey*, Employee Benefits Research Institute, Issue Brief (No. 192) 1997.

Data:
Current Population Survey, March 1988-1997.

The policy response has focused primarily on extending publicly funded health insurance coverage to children since they typically cost less to insure than adults and are considered more "deserving" of public support.[49, 50] Over the past decade, Medicaid has become a very important provider of health insurance to the nation's poorest children and families despite recent declines in enrollment.[51-53] According to data from the Employee Benefit Research Institute, Medicaid provided insurance to 18.4 million nonelderly Americans in 1987, or approximately 8.6 percent of the nonelderly population.[45] In 1996, however, Medicaid covered 28.2 million nonelderly Americans, or approximately 12 percent of all U.S. residents under the age of 65.[48] As shown in

Figure 1, over one-fifth of all children (15.5 million) were covered by Medicaid in 1996.[48] Medicaid also insured approximately 12.7 million or 7.8 percent of all non-elderly adults in the United States that year.[48]

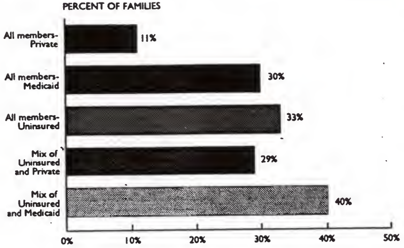
Medicaid coverage, however, has not secured access to the same provider types as private insurance.[26] According to the 1987 National Medical Expenditure Survey (NMES), 92 percent of children who had private insurance reported a physician's office as a regular source of care compared with 65 percent of those with public insurance and 75 percent of the uninsured.[54] Moreover, children with private insurance were less likely to wait more than 30 minutes to be seen at their regular source of care than uninsured or publicly insured children.[54] Longer waits for appointments and to see a provider while at the delivery site often pose insurmountable barriers to families with time constraints and result in delayed or non-receipt of care.[55-57]

Shortcomings of Medicaid compared to private insurance coverage in terms of promoting access to care notwithstanding, public coverage is better than no coverage. Despite expansions in the Medicaid program, results from the 1997 CPS indicate that 41.4 million, or 17.7 percent, of the non-elderly U.S. population lacked health insurance for the entire year 1996.[48] As presented in Figure 1, 14.8 percent of children (10.6 million) lacked health insurance that year, constituting roughly a quarter of all of the country's uninsured.[48] While insurance coverage is closely tied to income, adults and children with incomes under the federal poverty line form only a fifth of the uninsured population.[58] Those called 'the near poor' with incomes from 100 to 200 percent of the federal poverty line run the highest risk of being uninsured. This group often does not qualify for Medicaid but in many cases cannot afford or chooses not to purchase private health insurance.[15]

Many trends in the health care market such as high rates of medical care cost inflation,[59] increased cost-sharing with employees,[11, 60] fewer employers offering dependent coverage[15] and incremental health insurance reform targeting only population-specific categories,[49] have resulted in families with multiple sources of insurance coverage. The consequences of mixed insurance coverage within the family on access to care for children is not entirely clear. As shown in Figure 2, a family's ability to obtain needed services varies considerably by the different combinations of types of insurance coverage that constitute it. For instance, 30 percent of families with all members covered by Medicaid and 33 percent of families with all uninsured members did not obtain or delayed getting health care in 1996. However, 40 percent of families with a mixture of uninsured and Medicaid covered members delayed or did not receive needed care.[61] Importantly, these results do not reveal *who* was insured or uninsured in the family. More work is needed to understand how insurance status of caretakers affects ability to obtain care for dependent children.

FIGURE 2 FAMILIES EXPERIENCING BARRIERS TO MEDICAL CARE BY TYPE OF FAMILY COVERAGE

1996



Note:
At least one family member needed but did not get care or had difficulty getting care in one or more of these services in the past year; generalist or specialty physician care, emergency medical care, home health care, rehabilitation services, mental health services, and medications.

Source:
J. Kasper, 1997; unpublished.
(As presented in Hoffman, 1998.)

Data:
Kaiser Survey of Family Health Experiences, 1996.

A number of studies have examined length of spells without insurance and have found that the majority of these spells lasts less than one year.[62-65] Turn-over in Medicaid coverage is also very high. For instance, a recent study by Carrasquillo et al found that 62 percent of Medicaid beneficiaries remained covered for less than 12 months.[66] Studies that capture this change in insurance status are clearly needed to assess continuity of insurance and timely use of care.

Regular Source of Care and Ability to Obtain Health Services

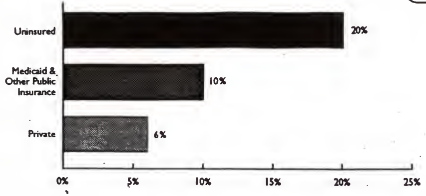
Starfield posits that the achievement of primary care requires "one place, one individual, or one team of associated individuals to serve as the source of care over a defined period of time, regardless of the presence or absence of particular health-related problems or of the type of problem. Having longitudinal care means that individuals in the population identify with a source of care as 'theirs,' and that the provider or groups of providers at least implicitly recognize the existence of a formal or informal contract to be the 'regular source of care.'"[67, p. 41] In the access to care literature, having a regular source of care has been treated as both a outcome measure of access (dependent variable) or a determinant of access (independent variable).[68] Such variation is largely due to differences in the conceptualization and operational definition of "access."

Those who have treated a regular source of care as an independent variable have found it to have a powerful impact on use of health services.[41, 68-73] In fact, a recent study showed that the lack of a regular source of care was a more consistent and stronger predictor of use than insurance status.[41] Please see *Appendix A* for a summary of selected studies on longitudinality of care and use of health services.

In a recent study, Newacheck et al. found that children without health insurance coverage were six times as likely as insured children not to have a regular source of care (24 percent vs. 4 percent).[38] These findings corroborate earlier research establishing a close link between health insurance and having a regular source of care.[74, 75] Figure 3 presents this relationship among children and shows that 20 percent of uninsured children did not have a regular source of care as compared to 10 percent of Medicaid and 6 percent of privately-insured children.[76]

FIGURE 3 PERCENT OF CHILDREN WITHOUT A REGULAR SOURCE OF CARE BY INSURANCE STATUS

1996



Source:
Weigers ME,
Weignick RM,
and Cohen JW.
"Children's Health,
1996," AHCPR, 1998;
(Pub. No 98-0008).

Data:
Medical Expenditure
Panel Survey, 1996.

Because the effects of health insurance and having a regular source of care are so intertwined, it is difficult to determine the independent and interactive effects of each on delayed or unmet health care needs. One recent study found significant interactions between these two variables in predicting delay in seeking care and use of physician and emergency department services. For instance, among patients with a regular physician, uninsured and privately insured patients did not differ on these indicators of access.[41] Yet both uninsured and privately insured patients with no regular physician had significantly worse access than patients with a regular physician and private insurance.[41] The generalizability of this study was limited, however, in that it sampled only patients within five university-affiliated urban hospitals in the Northeast.

Furthermore, the nature of a regular source might also have an important role in determining use of services. For instance, Lambrew et al. compared individuals who reported having a regular doctor versus those who reported having a regular site but no regular doctor within that site.[68] Although 85 percent of people with a regular source of care had a regular doctor, certain sites were less likely to organize their care around physicians. People who went to physician offices, clinics, or HMOs for their care were more likely to have a regular doctor, whereas those who went to hospitals, family health centers, walk-in clinics, and other places as their regular source of care were less likely to have a regular doctor.[68] The researchers found that individuals with any type of regular source of care were more likely to receive preventive and sick care and experience less preventable hospitalizations than those without a regular source of care. Persons with a regular doctor also performed more favorably on these access measures than those with a regular site but no regular doctor. Such findings illustrate need to incorporate the characteristics of the usual source of care when considering its effects on use of health services.

In their review of non-financial barriers to care, Halfon, et al. found that persons who identify their regular provider of care as a hospital outpatient department or public clinic, rather than a medical office, are significantly less likely to see the same provider on a subsequent visit.[30] Young children also typically receive less preventive care, including immunizations, in these settings. Since physician continuity is closely associated with increased family satisfaction with care and more consistent patterns of preventive care utilization, parental satisfaction with the parent-physician interaction surrounding the care for their children is three times greater among office-based physicians than for physicians in public clinics or hospitals.[30]

Cost and health outcomes of care are determined not only by health care utilization as a crude indicator or by simply “having a regular source of care,” but also by the appropriateness and adequacy of the services provided given the needs of population.[77] Programs such as the S-CHIP that are designed to promote "access" among the traditionally underserved should identify specific services that would be most effective in improving health status at the population level. The literature provides strong evidence that the use of on-going primary care services among vulnerable populations is associated with favorable health and cost outcomes.[78-83] The Institute of Medicine defines primary care as the "provision of integrated, accessible health services by clinicians who are accountable for addressing a large majority of personal health care needs, developing a sustained partnership with patients, and practicing in the context of family and community."[84, p. 1] Empirical studies operationalize these concepts as specific attributes of primary care including first-contact care with a designated primary care physician, longitudinality or ongoing care with a particular physician or place, comprehensiveness of services offered, and coordination of those services.[67]

Recent studies have shown that the availability and use of on-going primary care services is associated with lower rates of avoidable hospitalizations in child and adult populations,[85-88] reduced use of expensive and, at times, unnecessary specialist services,[89] as well as enhanced patient satisfaction with care.[90] Similarly, the literature suggests that programs promoting first contact with a primary care physician may also considerably reduce ambulatory expenditures.[91] For example, Forrest and Starfield found that episodes of illness that began with visits to an individual's primary care clinician, as opposed to other source of care, were associated with reductions in expenditures of 53 percent overall.[92]

The use of primary care has also been associated with higher levels of health status in children.[81] Shi found that among medical variables, primary care was by far the most significantly related to better health status, correlating with lower overall mortality, lower neonatal death rates and better birth weight outcomes.[93] Children with specialty care needs also benefited from having a on-going relationship with a primary care physician. For example, Chande and Kinnane found that children with appendicitis who were involved with a primary care provider were less likely to have appendiceal perforation than those who were not, irrespective of insurance status.[94] In short, substantial evidence in the literature suggests that promoting on-going primary care services among vulnerable populations, particularly children, is not only economically sound in that it is associated with fewer preventable hospitalizations, expensive emergency care use, and avoidable specialist services, but it is also linked to better health outcomes.

Sociodemographic Factors Associated with Health-Care Seeking for Children

A number of sociodemographic factors are also closely associated with a family's decision to seek health care for their children. A recent study by Weinick and Monheit found that the rise in the proportion of uninsured children from 1977 through 1996 was primarily a phenomenon within single-parent families.[95] The researchers concluded that parents' marital status, employment status, and family income are intimately tied to children's health insurance coverage.

Family characteristics can also act independently of health insurance in determining health care use. For instance, ethnic disparities in use of care for children cannot be fully attributed to differences in enabling characteristics or health status.[30, 33, 96-101] A study of insured children within a health maintenance organization found that minority status was associated with lower utilization of health care, independent of health need and maternal utilization of care.[22] Newacheck et al also found that minority children were at greater risk than white children of not seeing a specific physician at their place of care, not having after-hours emergency care available to them, facing longer travel times to care, waiting longer a their place of care, being inadequately vaccinated, and not seeing a physician for selected symptoms.[96]

Maternal education predicts delayed entry into care for children,[33, 100, 102, 103] lower preventive care utilization for children,[97, 104] and lack of compliance with the recommended well-child visit schedule.[30, 100] Closely tied to parental education is employment status. Children whose mothers work full time outside the home are more likely to delay care and have fewer ambulatory care visits than children whose mothers work part time or do not work outside the home.[23, 32, 105] These findings suggest that women who work full-time face additional time constraints that might prevent seeking care for their children.[29, 106]

Family structure also seems to play a role in children's receipt of health care. For instance, children's utilization of care decreases as family size increases.[23, 33, 102] Wolfe posits that family size's negative association with children's use of health care could perhaps be explained by additional financial or time constraints, or perhaps because parents learn how to manage children's health problems.[106] Findings regarding birth order would support the latter hypothesis; not only do children from small families but first born children also use more services than children who are born later in a family.[31] For example, Tessler and Mechanic found that for families of any size, adjusting for eight control variables (i.e. child's age, mother's age, number of chronic problems, race, type of medical insurance, etc.) first born children received more preventive care.[107]

Children in single-parent families are more likely to see a physician than children in two-parent homes.[23, 32] The role of single parent families in predicting child use of health care speaks to a large body of literature on parental distress and help-seeking for children.[22, 108-117] Despite some studies with null findings, research generally shows that psychologically distressed and situationally stressed individuals have a greater tendency to seek medical care, particularly for young children. Horwitz provides three possible explanations: (1) Distressed mothers have children who are sick more often or are more severely ill, possibly because of their exposure to stressful family situations; (2) distressed mothers are more sensitive to their children's symptoms, compared to non-distressed mothers; and (3) women experiencing psychological distress or confronting stressful situations deal in part with their distress or stress by seeking medical care for their children as a type of social support.[31]

Children living in families with incomes below the poverty line not only are disproportionately in need of health care, but they are much less likely to obtain it than their wealthier peers.[118-129] Poverty has a complex and multidimensional relationship with access to care that includes ability to purchase health insurance, proximity to health services, and safety of social environment.[30] In addition to lower levels of care, the quality and appropriateness of care received by poor children is not optimal. For instance, poor families are twice as likely as non-poor families to be dissatisfied with the medical care delivered to their children, irrespective of insurance status and health need[130] and are more likely than non-poor families to resort to emergency rooms for their children's routine sick care.[30, 126].

Chapter 3

Conceptual Model of Ability to Obtain Health Care for Families with Children

Over the last thirty years, various theoretical frameworks have been developed to explain the underlying determinants and health-related consequences of individual use of health care services.[67, 131-134] Few theoretical frameworks, however, have considered the unique role of children as dependents of adult caretakers. More specifically, little work has attempted to explain how family-level characteristics, particularly those of the mother, influence the ability of adult caretakers to obtain timely health care for their children. The scope of "access" has also varied considerably to include population characteristics[30, 91, 135] or just those structural features of the health care system that impede or facilitate the receipt of services.[56, 67] What these frameworks share, however, is an understanding that the availability and organization of health care resources should 'fit' the needs of the population served.[67, 132, 136] The adequacy and appropriateness of services given the needs of the population will determine if the family obtains timely care for children.

Andersen and Aday's Behavioral Model of Health Services Use aides understanding of population characteristics that explain a family's decision to seek care.[131, 137] These population characteristics are categorized as "predisposing," "need," and "enabling." Predisposing characteristics include variables that describe the propensity to use services that exists prior to the onset of illness.[138] Predisposing characteristics can further be divided into (1) demographic factors, (2) social status and (3) health beliefs. Demographic variables, such as age and gender, represent biological imperatives that suggest the likelihood that people will become ill enough to need services.[139] In contrast, social status can be measured by an array of factors that "determine the status of a person in the community, his or her ability to cope with present problems and command resources to deal with these problems, and how health or unhealthy the physical environment is likely to be."[135, p 15] Measures of social status include but are not limited to educational attainment, occupation, or immigration status. Health beliefs consist of "attitudes, values, and knowledge people have about health and health services that influence their subsequent perceptions of need and use of services." [131, p 2]

"Need" refers to health status or illness as a predictor of health services use. It also encompasses parental perception of child illness, need for both preventive and sick care as well as health risks facing children.[140] Angel and Worobey have shown that a set of factors including class, acculturation, and psychological factors influence the mother's evaluation of the severity of her child's symptoms and constrain her decision to seek health care for her child.[141, 142]

Enabling resources refer to the means that individuals and families have available to them to use health services.[131] Traditional indicators of enabling resources include family income, insurance status, and usual source of care. Of course, these factors often are closely linked. For instance, family income predicts insurance status that in turn predicts having a regular source of care for both children and adults. The type of insurance status also matters, however, in determining regular source of care and the type of that care. Individuals with Medicaid will be less likely to have a regular source of care than privately insured individuals. Since children are economic dependents of adults, the insurance status of parents is highly correlated with children's insurance coverage. Among certain families, however, children are eligible for coverage while their parents remain uninsured. In addition, the presence of maternal regular source of care is associated with children having a regular source. It is hypothesized that children whose mothers have identified a regular source for themselves and have learned to negotiate the health care delivery system will be more likely to have a regular source of care than children whose mothers do not have a regular source of care.

The nature of the health care delivery system itself greatly influences whether or not parents will obtain timely care for their children. This study's conceptual model builds on Donabedian's original framework of the medical care system as composed of structure, process, and outcome components.[143, 144] Starfield describes the structural element of the health care services system as the resources needed to provide services.[67] Structural factors include the ratio of personnel to the population, training of personnel, type of services offered, mechanisms for providing continuity of care, hours of operation, etc. How these structural characteristics of the health care sector meet the needs and expectations of the population will determine if the child receives timely or delayed care if at all.

It is the maternal experience in interacting with the health care delivery system that will determine her ability to obtain timely care for her children. Starfield describes the processes of the health services system as those that represent activities of the providers of care and those that represent activities of the population.[67] Provider activities include problem recognition, diagnosis, management, and reassessment. Based on experience and satisfaction with the process of care, parents will decide to what degree they will participate in the process and whether or not to continue using the service at all. This will affect the maintenance a regular source of care for children and the specific location of that care.

Health outcomes of care can be defined as the actual or potential health status attributable to antecedent structure and processes of care.[145, 146] Other factors that potentially affect health are unrelated or only indirectly related to the health care system. For instance, many predisposing characteristics and aspects of the social and physical environment impact health. When assessing the role of the health care sector in determining outcomes of care, these confounding factors must be adequately controlled. Furthermore, it is important to highlight the role of social and health policy in shaping not only health insurance, but influencing other predisposing and need characteristics of the population, the health care structure, processes, and outcomes, as well as the social and physical environment. Many of these factors are amenable to effective social policies that can affect potentially not only access to care but also health status of the population itself. Figure 4 presents this study's conceptual model that illustrates the processes by which caretakers obtain care for their children and the subsequent effects on child health status. Variables operationalized in this study are in lower case and highlighted in bold.

FIGURE 4 CONCEPTUAL FRAMEWORK OF FAMILY ACCESS TO HEALTH CARE

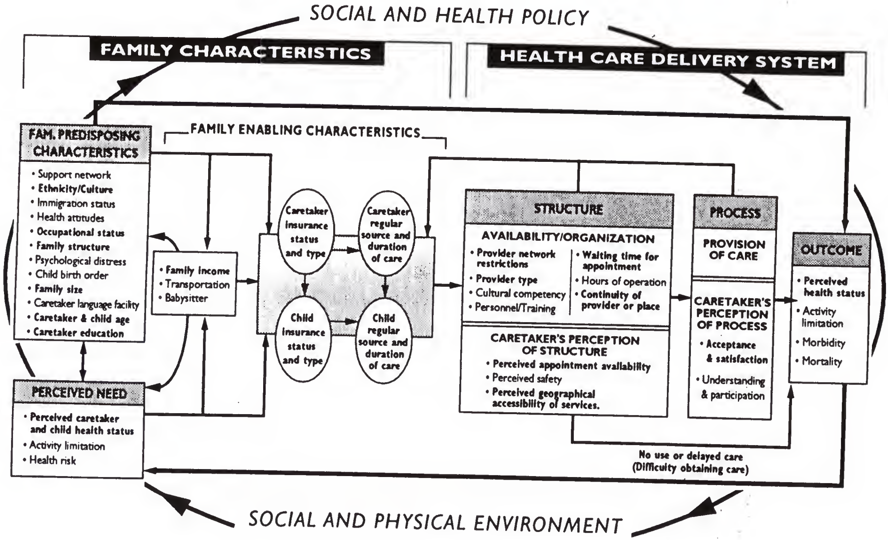


Illustration: Latino Families with Children and Ability to Obtain Health Care

This proposal's conceptual model is intended to explain the processes that ultimately determine use of health care by families. The literature has consistently shown that Latino children and their families are at great risk of delaying or not receiving needed health care.[96, 147-150] The following case study uses this dissertation's conceptual model to explain poor access among Latino families in the United States.

Social and Health Policy

Changes in social welfare, immigration, and health care policy have greatly limited health care providers in their ability to adequately serve vulnerable Latino children and their families.[151-153] For example, the Personal Responsibility and Work Opportunity Reconciliation Act (PRWORA), also known as welfare reform, essentially bars the use of public funds for all but certain emergency health services for both legal and undocumented immigrants, many of whom are Latino.[154-156] Similarly, since the recently passed S-CHIP is considered a "federal means-tested public benefit" under the immigration reform provisions in the PRWORA, states that create separate S-CHIP programs rather than expand Medicaid may not use their federal funds to assist legal alien children who arrive to the United States after August 2, 1996.[4]

Predisposing Family Characteristics

Consequently, many low-income Latino children born abroad or to immigrant parents may not qualify for Medicaid or have parents who are fearful of registering their children with the state.[156] Although U.S.-born Latino children qualify, as do all citizens, for welfare and Medicaid benefits, their caregivers if foreign-born may be reluctant to utilize the health care system, which they may perceive to be hostile. In 1994, nearly 40 percent of Latinos in the U.S. were born outside the United States, compared to only three percent of non-Latino whites.[157]

Place of birth is also directly related to English language ability, which has been found to be a strong determinant of health care use.[149, 158] Approximately 78 percent of all Latinos speak Spanish at home,[159] but over 95 percent of Latino families with foreign-born members speak Spanish at home.[160] Moreover, of the Latinos who speak Spanish at home, approximately one-half do not speak English 'very well or at all.'[161] The dearth of bilingual health providers or multilingual health messages makes the inability to speak English a significant barrier to utilizing health care services by Latino families. For instance, a Latino mother who has difficulty communicating in English may find it impossible to communicate with health providers, identify health resources in the community or understand health-related information for her child. Similarly, her inability to describe symptoms to her child's medical provider may compromise an accurate diagnosis. Moreover, if the mother does not understand the treatment regimen for her child's condition, she may not be able to implement it effectively and thereby jeopardize a positive outcome.[162]

Even though Latinos have made gains in recent decades in high school completion rates, nearly half of Latinos age 25 years and over had not graduated from high school in 1994. In addition, three in ten Latinos in the U.S. age 25 years and over had less than a 9th grade education.[157] Evidence in the literature suggests that those

Latino subgroups whose educational level most closely approximates that of non-Latino whites (i.e. Cubans) are more likely to use health care services than other Latinos.[163]

Directly related to educational attainment is vocational and employment status of the child's caretaker. Data from 1994 indicate that Latinos experienced an unemployment rate five percentage points higher than non-Latino whites (11 percent vs. 6 percent, respectively). Also, more Latino males worked in semi-skilled, non-professional occupations than did non-Latino whites, 28 percent vs. 19 percent, respectively.[159] Latino women were largely employed in technical, sales and administrative support positions.[159] Since private health insurance is primarily tied to employment in the United States, the occupation and employment status of Latino parents will greatly determine the insurance status of their dependent children.[164, 165] Unfortunately, many occupations held by Latinos do not provide insurance coverage for the worker, let alone coverage for dependents.[150, 166, 167] For instance, recent data using the 1996 Medical Panel Expenditure Survey (MEPS) show that approximately 38 percent of Latino working adults do not have health insurance, compared to 25.7 percent of working blacks and 14.7 percent of working whites.[168] Children of working parents may also be ineligible for the Medicaid program because of family income.[119] What is more, positions with less autonomy, such as those predominately filled by Latinos in the United States, do not allow caretakers to leave work in the case of child illness or for well-child care.[169] Consequently, sick care, if sought at all, may be postponed until more severe and costly stages of the illness develop, and preventive care may not occur at all given work-related constraints of the caregiver.

Differential patterns of health care use by Latino families have been attributed partly to cultural beliefs and values that influence care-seeking behavior.[30, 150] One question that has been posed in the literature regards the extent to which Latino families substitute traditional western biomedical care with alternative "folk" medicine.[170-174] Although there is evidence to suggest that Latinos do, indeed, use alternative systems of care, the majority does not see these remedies as a principal form of care. For example, an analysis of the 1982-84 Hispanic Health and Nutrition Examination Survey (HHANES) revealed that only 4.2 percent of Mexican Americans consulted a folk healer in the year prior to the survey.[175] Importantly, a Latino parent's belief and use of traditional folk remedies does not preclude use of modern medicine for herself or her child. In fact, Latinos may use home or alternative methods of treatment while under the care of a physician.[162]

Family Perception of Need for Health Care

Angel and Worobey have shown that a set of factors including class, acculturation, and psychological factors influence the mother's evaluation of the severity of her child's symptoms and constrain her decision to seek health care for her child.[141, 142] In their study of Mexican American mothers, they demonstrated that the least acculturated mothers reported their children to be in poorer health than those mothers who were more acculturated. Perceived need of health care has been found to have powerful predictive value in the use of health care among Latinos.[176, 177] Latino children are at risk for higher morbidity and mortality than non-Latino white peers.[178] Although the extent to which poor Latino children suffer from chronic conditions more than non-Latino peers is uncertain,[179] some studies have shown that the severity of chronic conditions is increased for poor Latino children.[180, 181] For example, Latino children and youth tend to spend more days in bed and away from school (restricted activity) as well as more nights in the hospital due to a chronic condition than non-Latino peers.[35] Furthermore, Latino and other minority children experience more incidence of acute infectious disease[182] and injury[183, 184] that may later become chronic conditions and disabilities than do non-Latino white peers.

Family Enabling Characteristics

Inability to pay for health care is a common problem among low-income Latino families given high rates of poverty status and lack of health insurance coverage.[149] In 1994, poverty rates for Latino families were more than twice as high as for non-Latino white families. Approximately 27 percent of Latino families were below the federal poverty line compared to 11 percent of non-Latino white families.[157]

Insurance status is closely linked to family income and poverty status of Latino children. Within the Latino community, health insurance coverage varies considerably by national subgroup[185-187] as well as by documentation status.[188-191] For example, Chavez et al found in a community sample in San Diego, California that undocumented Latinos were less likely to have health insurance than their documented peers.[188] Over 80 percent of the undocumented lacked health insurance, as compared to 40 percent of the documented immigrants.

The lack of health insurance is a considerable problem for Latino children given that is a powerful predictor of utilization of preventive and curative care, and they are much less likely to have it compared to their non-Latino peers.[96, 147, 149] In Cornelius' analysis of the 1987 National Medical Expenditure Survey (NMES), nearly half (49.2%) of poor Latino children had no insurance compared to 29.9 percent of poor black children and 37.8 percent of poor white children.[121] Valdez reports that Latinos without health insurance receive roughly half as much medical care as those with it, but they are generally in poorer health.[192] Also, compared to non-Latino black and white children, Latino children are less likely to have public health insurance such as Medicaid.[121, 193] Corroborating this finding, a recent study in Los Angeles showed that while most (84 percent) of young Latino children were eligible for Medicaid, nearly forty percent had episodic or no coverage at all.[190] Thus, for Latino children, Medicaid contributes significantly to their overall utilization of health care services compared to uninsured Latino children and increases the probability of having a usual source of care. Medicaid, however, has not assured low-income children access to the same locations and continuity of care as that of privately insured children.[96] Approximately 10 percent of the Latino children with private insurance had a hospital-based site as their usual source of care, while more than 19 percent of Latino children without private insurance had a hospital outpatient department or emergency room as their usual source of care.[121]

There are no studies that specifically test the relationship between parental health insurance status and the timeliness of services for children among Latino families. It is hypothesized, however, that these relationships would operate similarly within Latino families as the general U.S. population. Maternal health insurance predicts child health insurance coverage. Maternal health insurance also predicts her usual source of care, which in turn predicts the child's usual source of care. For both parents and children, insurance status and having a regular source of care are population characteristics that facilitate families entry into the health care system. Other factors, however, that are not directly related to insurance status and having a regular source of care might disproportionately affect Latino families and impose barriers to timely receipt of care.

Health Care Delivery System: Structure, Process, and Outcome

The adequacy of the health care system structure to meet the needs of the Latino family will also directly affect the timely receipt of services. Organizational barriers such as long waits for appointments and time in waiting room to see a provider as well as minimum costs to uninsured patients may prove to be formidable barriers to obtaining needed health care.[149] For instance, in their study of public health clinic systems serving low-income urban areas, Kiefe and Hyman found that 27.4 percent of Latinos delayed care because the wait was too long.[57] A national sample of Mexican Americans reported that 9.5 percent thought they had to "wait too long in the office or clinic" and 9.3 percent had to "wait too long to get an appointment."[177] Well over half to two-thirds of the Mexican Americans who identified wait as a barrier did not receive needed care because of it.[177].

Over half (53.7 percent) of the Latinos interviewed by Kiefe and Hyman reported delaying care because it was too costly.[57] Eighteen percent of Mexican Americans in the HHANES identified cost of care as a barrier, but more than 82 percent of those who encountered a financial barrier went without needed care.[177] Since a large number of low-income Latinos typically served by the public clinics lack health insurance or are underinsured, minimum charges on a sliding fee scale can be cost prohibitive for families seeking care.

The cultural competency of health care providers is also a critical factor in reducing barriers to care for Latino families. The effective delivery of medical care requires more than merely technically diagnosing a condition. It is also a social interaction that transpires in a culturally defined context.[119] Aday writes that "acceptability and adequacy of services being offered to [vulnerable] populations is substantially affected by social and cultural problems of miscommunication, misinformation, and mistrust in the relationship between provider and patient."[119, p. 200] Language barriers and discordant cultural beliefs between the provider and patient are often at the heart of these problems, and they may prevent families from using health services even if they are available.

Unfortunately, discrimination based on race and ethnicity still permeates the health care delivery system.[162] For example, one study revealed that 22 percent of Latinos believe that they run into discrimination when seeking health care and 27 percent believe that they face discrimination in the quality of care to which they have access.[194] Another study looking at health care providers found that in addition to a pervasive lack of knowledge regarding Latino health status and heterogeneity, approximately half of the providers believed that Latinos should "learn English instead of expecting bilingual services to be provided."[162, p. 35]

The Latino families' interaction with the structure of the health care system will determine if care is received. The content of the services provided is also important in determining health outcomes. For instance, the literature suggests that the processes of care provided to Latino and other ethnic minority patients is greatly improved by having a language concordant physician and may increase parent's satisfaction with the care that their children receive.[194-196] For example, Latino patients cared for by a language-disconcordant physician in one study were more likely to omit medication and miss office appointments, and were slightly more likely to make an emergency department visit than patients with language-concordant physicians.[195] These processes of care will in turn influence the health status of the child, which predicts need for care in the future.

Chapter 4

Methods and Background Analyses

Source of Data and Study Population

This study uses data from the first three waves of the longitudinal K-SOFHE conducted from October 1995 through January 1998. Two key decisions in the survey design were to 1) focus on households with at least one person under the age of 65, and 2) oversample families with uninsured family members or members with Medicaid coverage.[197] The K-SOFHE was funded by the Henry J. Kaiser Family Foundation and was principally designed by Judith Kasper at the Johns Hopkins University School of Hygiene and Public Health.

The sampling unit was the family, where a family was defined as related individuals living together, unrelated individuals living together in a marriage-like relationship, or a single person household. Resident foster children were included in the family as were children age 16 or under who were living away from home. If a housing unit had boarders, roommates, or live-in hired help, the residents of the housing unit were not considered to be one family. Children 17 or older living away from home were not considered part of their parents' family. Two or more families may reside in a housing unit, and a family must have had at least one person under 65 years of age.[198]

Families were selected by sampling housing units from the National Opinion Research Center's (NORC) national area probability frame. The NORC frame consists of approximately 70,000 housing units that were scientifically selected using a stratified, multistage procedure to ensure an accurate representation of the greater U.S.

population.[198] Both the screening interview and baseline interview were conducted in person by an interviewer. In-person interviews were conducted to ensure a high response rate at the outset of the survey and to establish a connection with the families to encourage continued participation in subsequent rounds. A knowledgeable family member served as respondent for all family members, as is done in most national household surveys. The interviewer recorded detailed contact information for subsequent rounds of interviewing. Families were then contacted by telephone for the second and third waves of interviewing and effort was made to interview the same respondent.[197]

The K-SOFHE over sampled families in which at least one family member had Medicaid coverage or no insurance at all. Since the sample design was originally intended to support tests of significant differences among the insurance categories, approximately equal numbers of families with Medicaid, private, and no insurance were selected. Of resident families in valid, non-vacant housing units with English-speaking residents, 82 percent were successfully interviewed resulting in a baseline cohort of 1,401 families (3,949 individuals). Of the 1,401 selected baseline families, 498 families had an uninsured member, 404 families had a member covered by Medicaid (128 of these families also had uninsured members), and 499 families had private insured members.[198]

Table 1 presents unweighted sociodemographic characteristics of the baseline sample. Round 1 contains 1,334 children under 18 years and 2,489 non-elderly adults 18 to 64 years of age. A brief review of the sociodemographic profile reveals that low-income and minority groups are over represented compared to their proportion in the national population. For instance, over 42 percent of the unweighted child subsample is under the federal poverty line compared to approximately 21 percent of the child population in general.[199] Latino and black, non-Latino children constitute 18.7 percent and 20.8 percent, respectively, of the child sample. Approximately 60 percent of the non-elderly adult population has less than or equal to 12 years of education (high school graduate or less).

TABLE 1

UNWEIGHTED SOCIODEMOGRAPHIC PROFILE OF K-SOFHE BASELINE SAMPLE

	Children (<18 yrs) N = 1,334		Adults (18 = 64 yrs) N = 2,489	
	n	%	n	%
Gender				
male	678	50.8	1133	45.5
female	656	49.2	1356	54.5
Health Status				
Excellent	577	44.1	668	27.1
Very good	431	33.0	762	30.9
Good	233	17.8	647	26.3
Fair/Poor	67	05.1	387	15.7
Race/Ethnicity				
white, non-Latino	721	54.1	1643	66.0
black, non-Latino	278	20.8	416	16.7
Latino	249	18.7	323	13.0
other	86	06.4	107	04.3
Family Poverty Status				
<100 percent poverty	514	42.3	555	25.0
100 to 199 percent poverty	323	26.6	613	27.6
200 to 399 percent poverty	271	22.3	658	29.6
= 400 percent poverty	107	08.8	396	17.8
Education Status				
grade school or less	-	-	161	06.6
high school	-	-	1320	53.9
some college or more	-	-	966	39.5

NOTE: Some counts may not sum to total N due to missing values
Source: K-SOFHE 1995-1996 Baseline Data

Table 2 presents unweighted health care-related characteristics of the K-SOFHE baseline sample. Families reported difficulty in obtaining care for approximately eight percent of children. Over 35 percent of the non-elderly adult sample was uninsured, 46.8 percent had private insurance and 15 percent had Medicaid coverage. Non-elderly adults were also much more likely than children not to have a regular source of care, 22.6 percent vs. 9.4 percent, respectively.

Table 2
Unweighted Health Care Profile of K-SOFHE Baseline Sample

	Children (< 18 yrs) N = 1,334		Adults (18 = 64 yrs) N = 2,489	
	n	%	n	%
Regular Source of Care				
yes	1121	90.6	1831	77.4
no	116	09.4	534	22.6
Duration of Regular Source of Care				
< 1 year	258	22.8	282	15.6
1 = 5 years	573	50.5	820	45.5
> 5 years	303	26.7	701	38.9
Insurance Status/Type				
private	467	35.1	1162	46.8
Medicaid	593	44.6	372	15.0
uninsured	257	19.3	883	35.6
other	12	01.0	64	02.6
Difficulty Obtaining Health Care				
yes	101	07.6	407	16.4
no	1233	92.4	2082	83.6

NOTE: Some counts may not sum to total N due to missing values
Source: K-SOFHE 1995-1996 Baseline Data

Table 3 indicates that the sample size declined somewhat from 1,401 families at baseline to 1,146 families in Round 2. The number of families interviewed in Round 3 increased, however, from the previous Round to 1,183. No substitution of families occurred between Rounds. Not shown in Table 3, a total 1,062 or 76 percent of families participated in all three Rounds of the study.

TABLE 3
PANEL RETENTION BY INSURANCE TYPE

Insurance Category	*Baseline Families*	*Round 2 Families*	*Round 3 Families*
Medicaid	404	319	339
Uninsured	498	411	411
Private Insurance	499	416	433
Total	1,401	1,146	1,183

Source: K-SOFHE Rounds 1-3

Study Sample

Panel Participation and Attrition

For the purposes of this study, a "child" was defined as anyone less than 18 years old who was not married or living alone; four 17 year old girls were excluded from the child sample because they were married or living with their partner. As shown in Table 4, the K-SOFHE consisted of 1,522 children when Rounds 1 though 3 are considered together. Only 837, or 55 percent, however, of these children were represented in all three rounds.

Table 4
Retension and Participation of Children in the K-SOFHE, 1995-1998

R1 only	R2 only	R3 only	R1 & R2	R1 & R3	R2 & R3	R1, R2, & R3	Total Children R1, R2, or R3
240 15.8%	28 1.8%	93 6.1%	135 8.9%	119 7.8%	70 4.6%	837 55.0%	1522 100%

Source: K-SOFHE Rounds 1-3

Table 5 shows panel attrition and participation of children in each Round. For instance, 1,331 children participated in Round 1. Round 2, however, contained 1,070 children. The majority of children in Round 1, 972, or 73 percent, also participated in Round 2. There were 98 new children in Round 2 that did not participate in Round 1. These children were either born after interviewing for Round 1 or moved into families that were already part of the K-SOFHE sample. "Out of scope" Round 2 children include those children who were 17 years old in Round 1 and were excluded in Round 2 because they had turned 18 years old. Fifty children from Round 1 were out-of-scope in Round 2. "In scope loss" includes children who were under the age of 17 in the prior round and were eligible for inclusion in this study during Round 2 but were not present. Of those eligible children for Round 2, 309 did not participate.

In total, 1,119 children participated in Round 3 - an increase of 49 children from the previous Round. Of those children in Round 3, nearly 72 percent had participated in Round 1 and 85 percent in Round 2. However, 93 children were new to the round, and 73 children were out of scope from previous rounds. In other words, they were either 16 years old in Round 1 or 17 years old in Round 2 (for children not present in Round 1). Of eligible children from Round 1, 306 did not participate in Round 3, and 118 eligible children from Round 2 who did not participate in Round 1 also did not participate in Round 3.

Table 5
Panel Attrition and Participation for Children, K-SOFHE 1995-98

	Round 1	Round 2	Round 3
Total No.	1331	1070	1119
No. from R1	-	972	956
% of R1	-	73.0	71.8
No of R2	-	-	907
% of R2	-	-	84.8
New to Round	-	98	93
Out of Scope	-	50*	73**
In scope loss from R1	-	309	306
In scope loss from R2	-	-	118

Source: K-SOFHE Rounds 1-3
* 17 years old in Round 1
** 16 years old in Round 1 or 17 years old in Round 2 and not in Round 1

Identification of the Child's Primary Caretaker

The "caretaker" role for a child is primarily based on familial and social relationships between adults and their children. For the purposes of this study, the child's primary caretaker was defined as the person who would be most likely to make decisions regarding the child's need for health care. Presumably, the primary caretaker would decide when the child needed to be seen by a provider and would be responsible for arranging the child's health care. As demonstrated by previous work cited in the literature review, females, particularly mothers, tend to be primary caretakers of children. Other female relatives, however, such as grandmothers, aunts, or adult sisters, might also assume this responsibility for children in their mother's absence. In rare cases, single fathers or other adult males might assume responsibility for health care seeking on behalf of their children.

Since a large portion of this study focuses on the role of the caretaker in obtaining timely health care for their dependent children, primary caretakers of children in the study sample needed to be identified. Figure 5 presents the decision tree used in this study to identify primary caretakers of children. The processes in caretaker selection were based on four general assumptions:

1. Females are more likely to be the primary caretakers of children than males;
2. Mothers are more likely to be primary caretakers of children than other adult females in the family unless the child's mother is a minor (less than 18 years old) and lives with her own mother. In this case, the young child's grandmother was considered to be the primary caretaker;

3. Grandmothers are more likely to be primary caretakers of children in the absence of the child's mother than other adult females in the home such as the child's aunts, cousins, or adult siblings; and
4. Fathers are more likely to be the primary caretaker of children than other adult male relatives of the child if living together.

FIGURE 5 DECISION TREE FOR SELECTING ADULT CARETAKERS

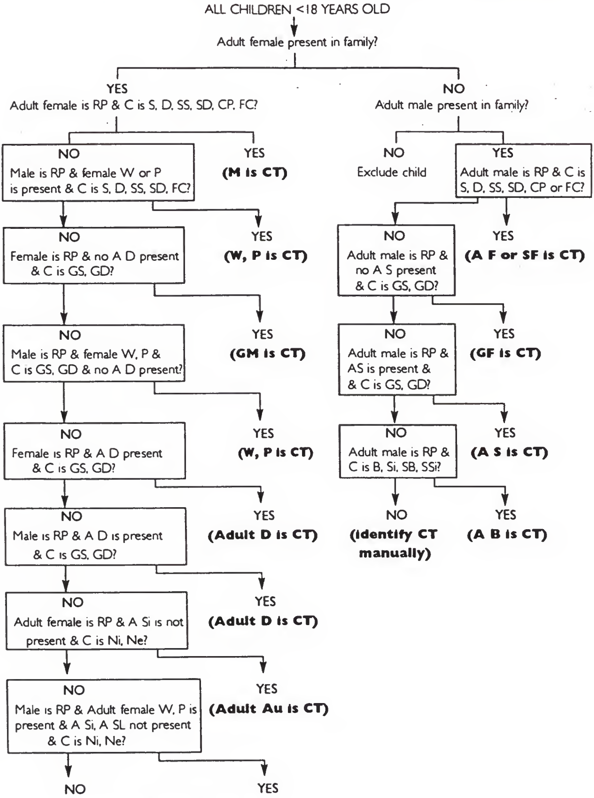


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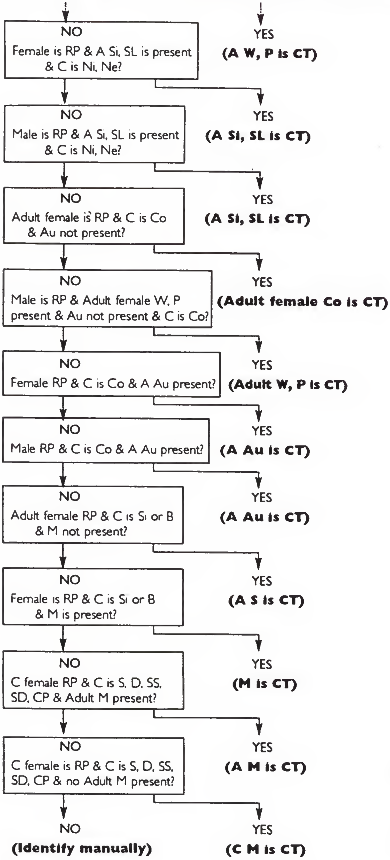
FIGURE 5 DECISION TREE FOR SELECTING ADULT CARETAKERS *continued*



KEY

A= adult ≥18 years old
Au= aunt
B= brother
C= child <18 years old
CP= child of partner
Co= cousin
CT= caretaker
D= daughter
F= father
FC= foster child
GD= granddaughter
GF= grandfather
GM= grandmother
GS= grandson
M= mother
Ne= nephew
Ni= niece
P= partner
RP= reference person
S= son
SB= stepbrother
SD= stepdaugther
Si= sister
SL= sister-in-law
SS= stepson
SSi= stepsister
W= wife

Table 6 presents five examples of K-SOFHE families with children. All persons in the K-SOFHE were labeled according to their relationship with the survey's reference person who was the survey respondent. For instance, in example 1, the reference person is a 40 year-old female with one 12 year-old son and one 10 year-old daughter. The adult female (or mother) is considered the primary caretaker of these two children since they are her son and daughter. However, the caretaker relationship is not based entirely on biological ties between women and children. For instance, in example 2, the 28 year-old female reference person would be considered the primary care taker of her 15 year-old and 13 year-old stepchildren since their biological mother is not present in the family. The children's stepmother is considered the primary caretaker even though the children's biological father (her husband) is present since female gender trumps male gender.

Families might include multiple generations within one household. Example 3 presents a 60 year old male reference person, his 58 year-old wife, 32 year-old daughter, 10 year-old grandson, and 8 year-old granddaughter. In this case, the 32 year-old daughter would be the children's primary caretaker since she is most likely their mother. Similarly, example 4 contains two adult females and two children. Here, the 40 year-old male reference person is accompanied by his 38 year-old wife, 32 year -old sister, 7 year-old niece and 5 year-old nephew. His sister would be the children's caretaker since his niece and nephew are most likely her children.

Even though this was a relatively rare event, example 5 presents an interesting challenge since there are multiple caretakers within this one family unit. A total of 19 families had multiple child-caretaker dyads in the K-SOFHE data set at Round 1. This family contains the 55 year-old female respondent, her two adult daughters, one adult son, and three grandchildren ranging in age from 3 to 15 years of age. Additional clues were used to identify the caretaker of each child. For instance, differences in age between grandchildren and adult children in the household were helpful to identify child-caretaker dyads.

In most cases, low-income adults with children only qualify for Medicaid if their children qualify as well. In example 5, the eldest daughter has been identified as the primary caretaker of the oldest grandson and granddaughter since the 23 year-old daughter and the 20 year-old son are too young to be the parent of these children. Also, these two children share the same type of insurance status with their 35 year-old mother. Similarly, we would consider the 23 year-old daughter to be the primary caretaker of the youngest child since (1) she could have given birth to him when she was 20 years old, and (2) she shares the same insurance type. While it is possible that the youngest grandchild belongs to the adult son (the child could still qualify for Medicaid and he could be uninsured) or older adult daughter, the 23 year-old daughter would not normally qualify for Medicaid if she did not have her own child. Therefore, we consider her the child's primary caretaker.

TABLE 6
EXAMPLES OF CARETAKER IDENTIFICATION BY DECISION TREE (FIGURE 5)

Ex.	Person ID	Relationship	Age	Gender	Insurance Type	Caretaker
1	1000049001	ref.	40	female	M	Y
	1000049002	son	12	male	M	N
	1000049003	daughter	10	female	M	N
2	1003767801	ref.	28	female	U	Y
	1003767802	husband	40	male	P	N
	1003767803	stepson	15	male	U	N
	1003767804	stepdaughter	13	female	U	N
3	1000061001	ref.	60	male	P	N
	1000061002	wife	58	female	P	N
	1000061003	daughter	32	female	P	Y
	1000061004	grandson	10	male	P	N
	1000061005	granddaughter	8	male	P	N
4	100456701	ref.	40	male	U	N
	100456702	wife	38	female	U	N
	100456703	sister	32	female	U	Y
	100456704	niece	7	female	M	N
	100456705	nephew	5	male	M	N
5	100786501	ref.	55	female	P	N
	100786502	daughter	35	female	P	Y (1)
	100786503	daughter	23	female	M	Y (2)
	100786504	son	20	male	U	N
	100786505	granddaughter	15	female	P	N (1)
	100786506	grandson	14	male	P	N (1)
	100786507	grandson	3	male	M	N (2)

KEY: M= Medicaid • P= Private • U= Uninsured
Y= Yes • N= No

Table 7 compares children with male and female caretakers on sociodemographic characteristics at baseline. Male caretakers tended to be older than female caretakers, and children of male caretakers tended to be older than children of female caretakers. Although there was no statistical difference in family poverty status, male caretakers tended to have more education than female caretakers. A greater proportion of male caretakers also worked than female caretakers, but among those who worked, there was no statistically significant difference in full-time status (analysis not shown).

Table 7
Unweighted Comparison of Children with Male and Female Caretakers at Baseline, 1995-96

	Children with Male Caretaker n=43 %	Children with Female Caretaker n=1288 %
Child Age*		
0 < 5 years	18.6	31.9
5 < 12 years	37.2	40.5
12 < 18 years	44.2	27.6
Child Gender		
male	55.8	50.7
female	44.2	49.3
Child Health Status		
excellent	50.0	43.9
very good	25.0	33.2
good	20.0	17.8
fair/poor	5.0	5.1
Family Structure*		
2 parents	0.0	55.4
1 parent	81.4	29.3
other[a]	18.6	15.4
Family Poverty Status		
≤ 100%	37.2	41.7
101 ≤ 200%	37.2	24.8
201 ≤ 400%	16.3	24.2
> 400%	9.3	9.3
Number of Children		
1 child	30.2	22.1
2 children	37.2	28.8
≥ 3 children	32.6	39.1
Age of Caretaker*		
17 < 25 years	7.0	13.8
25 < 35 years	23.3	39.1
35 < 50 years	58.1	42.8
≥ 50 years	11.6	4.4
Caretaker Education*		
≤ 8th grade	2.4	7.1
9th ≤ 12 grade	45.2	58.2
≥ some college	52.3	34.7
Caretaker Race/Ethnicity		
white, non-Hispanic[b]	53.5	62.2
black, non-Hispanic	16.3	21.6
Hispanic	30.2	16.2
Caretaker Employment Status*		
in labor force[c]	74.4	52.2
not in labor force	25.6	47.9

Source: K-SOFHE Round 1

*Statistically Different at $p < .05$

[a] Families consisting of adults other than parents with children, e.g. grandparent(s)

[b] "Other" race has been combined with non-Hispanic, whites

[c] Works at a "job" or in a business for pay.

Table 8 provides a comparison of children with male and female caretakers on indicators of ability to obtain health care at baseline. Children of male caretakers were no more likely to be uninsured than children of female caretakers. Similarly, male caretakers themselves did not significantly differ in likelihood of having insurance coverage. However, children with male caretakers were much less likely to have a usual source of care. For instance, less than 80 percent of children with male caretakers had a usual source of care in 1995/96 compared to over 90 percent of children with female caretakers. Similarly, a smaller proportion of male caretakers had a usual source of care for themselves than did female caretakers. Among those who had a usual source of care, children with female caretakers were more than twice as likely to have a private practice physician or private clinic as their usual source than children with male caretakers. Despite differences in the presence and type of a usual source of care, children with male caretakers were not significantly more likely to experience difficulty in obtaining care than children with female caretakers. Findings from this analysis should be interpreted with caution, however, since there are few children with male caretakers and there was large sampling error.

Table 8

Unweighted Comparison of Children with Male and Female Caretakers at Baseline, 1995-96

	Children with Male Caretakers n=43 %	Children with Female Caretakers n=1288 %
Child Insurance Type		
Medicaid	50.0	45.1
private	29.0	35.4
uninsured	22.1	19.5
Child Usual Source of Care (USC)*		
yes	76.9	91.1
no	23.1	8.9
Duration of Child's USC		
< 1 year	16.7	22.9
1 to 5 years	50.0	50.6
> 5 years	33.3	26.5
Solo MD or Private Clinic is Child's USC*		
yes	23.3	49.8
no	76.7	50.2
Specific Provider at Child's USC		
yes	65.5	74.2
no	34.5	25.8
Difficulty Obtaining Care for Child		
yes	2.3	7.8
no	97.7	92.2
Satisfaction with Access to Care for Child		
very satisfied	45.2	51.1
generally satisfied	33.3	35.0
somewhat dissatisfied	11.9	6.2
very dissatisfied	9.5	7.7
Caretaker Insurance Type		
Medicaid	33.3	32.3
private	30.8	38.6
uninsured	35.9	29.1
Caretaker USC*		
yes	67.4	83.4
no	32.6	16.6
Duration of Caretaker's USC		
< 1 year	4.4	18.8
1 to 5 years	47.8	44.5
> 5 years	47.8	36.7
Solo MD/Private Clinic is CT's USC		
yes	47.8	45.8
no	52.2	54.2
Specific Provider at Caretaker's USC		
yes	60.9	74.8
no	39.1	25.2
Difficulty Obtaining Care for Caretaker		
yes	27.9	19.3
no	72.1	80.7

Source: K-SOFHE Round 1

* Statistically Different at $p < .05$; CT=Caretaker

Analysis of Study Sample Attrition

Table 9 compares in-scope children lost to follow-up in Round 2 to those children who remained in the sample that year using baseline data. In general, eligible children lost to follow-up tended to be older than those who remained in the sample. For instance, 30.4 percent of in-scope loss were 12 < 17 years old at Round 1 compared to 23.8 percent of children who remained in the sample. Technically, a 17 year-old was still considered a child in this study if they were not married or living with their partner and were residing with adults in the same family. Older children in Round 1 were more likely to leave for college or go off on their own one year later than younger children and, therefore, were less likely to participate in the second year of interviewing.

On average, eligible children who dropped out of the sample by Round 2 came from poorer families. For example, over 50 percent of the in-scope loss children had family incomes at or below the poverty line compared to 39 percent of children who remained in the sample. Eligible children from one-parent families were more likely to drop out of the sample (34.3%) than two-parent families (29.5%). Non-represented child caretakers also tended to be younger and less educated than caretakers who remained in the sample in Round 2. The two groups did not appear to differ in terms of race/ethnicity or employment status of the child's caretaker.

Table 9
Unweighted Comparison of In-Scope Children Lost to Follow-Up with Children who remained in Round 2 on Sociodemographic Measures at Baseline

	Remained in R2	In Scope Loss in R2
	n=972	n=309
	%	%
Child Age*		
0 < 5 years	32.6	33.0
5 < 12 years	43.6	36.6
12 < 17 years	23.8	30.4
Child Gender		
male	51.5	46.3
female	48.5	53.1
Child Health Status*		
excellent	46.0	38.0
very good	34.0	30.5
good	15.5	24.7
fair/poor	4.6	6.9
Family Structure*		
2 parents	56.9	44.7
1 parent	29.5	34.3
other[a]	13.6	21.0
Family Poverty Status*		
≤ 100%	39.3	51.0
101 ≤ 200%	24.9	26.7
201 ≤ 400%	25.3	17.2
> 400%	10.5	5.1
Number of Children		
1 child	21.2	23.3
2 children	38.8	39.2
≥ 3 children	40.0	37.5
Age of Caretaker*		
17 < 25 years	12.4	19.1
25 < 35 years	39.6	41.1
35 < 50 years	44.4	35.0
≥ 50 years	3.6	4.9
Caretaker Education*		
≤ 8th grade	5.6	11.0
9th ≤ 12 grade	57.7	58.5
≥ some college	36.7	30.6
Caretaker Race/Ethnicity		
white, non-Hispanic[b]	62.0	59.9
black, non-Hispanic	21.4	21.7
Hispanic	16.6	18.5
Caretaker Employment Status		
in labor force[c]	52.0	52.4
not in labor force	48.0	47.6

Source: K-SOFHE Rounds 1-2

Statistically Different at $p < .05$

R2 = Round 2

[a] Families consisting of adults other than parents with children, e.g. grandparent(s)

[b] "Other" race has been combined with non-Hispanic, whites

[c] Works at a "job" or in a business for pay.

As shown in Table 10, eligible children lost to follow-up were more likely to have Medicaid (52.3% vs. 44.0%, respectively) and be uninsured (23.5% vs. 18.0%, respectively) at Round 1 than children who remained in the sample one year later. Similarly, they were more likely not to have a usual source of care (14.6% vs. 7.2%, respectively) and have experienced a barrier to care that prevented or delayed use in the previous year (10.4% vs. 6.4%, respectively). Caretakers of children not represented in Round 2 were more likely to be uninsured (37.9% vs. 26.6%, respectively) and to have encountered a barrier to care for themselves in the previous year (24.9% vs. 18.0%, respectively). Although caretakers of children lost to follow-up were not less likely to have a regular source of care at baseline, the nature of their care did differ from caretakers of children in Round 2. For instance, they were more likely to have shorter ties with their regular source of care (28.4% < 1 year vs. 15.9% <1 year), and that regular source was more likely to be a solo physician or private clinic (37.8% vs. 48.4%, respectively).

Table 10
Unweighted Comparison of In-Scope Children Lost to Follow-Up with Children who remained in Round 2 on Access Measures at Baseline

	Remained in R2 n=972 %	In-Scope Loss in R2 n=309 %
Child Insurance Type[a] *		
Medicaid	44.0	52.3
private	38.0	24.2
uninsured	18.0	23.5
Child Usual Source of Care (USC)*		
yes	92.8	85.4
no	7.2	14.6
Duration of Child's USC		
< 1 year	22.1	27.1
1 to 5 years	50.6	50.0
> 5 years	27.3	22.9
Solo MD or Private Clinic is Child's USC*		
yes	51.3	40.0
no	48.7	60.0
Specific Provider at Child's USC		
yes	74.9	71.4
no	25.1	28.6
Difficulty Obtaining Care for Child*		
yes	6.4	10.4
no	93.6	89.6
Satisfaction with Access to Care for Child*		
very satisfied	53.9	41.0
generally satisfied	34.3	37.8
somewhat dissatisfied	5.3	10.3
very dissatisfied	6.5	11.0
Caretaker Insurance Type[a] *		
Medicaid	32.5	33.3
private	40.9	28.8
uninsured	26.6	37.9
Caretaker USC		
yes	83.5	79.9
no	16.5	20.1
Duration of Caretaker's USC*		
< 1 year	15.9	28.4
1 to 5 years	45.7	38.7
> 5 years	38.4	32.9
Solo MD/Private Clinic is Caretaker's USC*		
yes	48.4	37.8
no	51.6	62.2
Difficulty Obtaining Care for Caretaker*		
yes	18.0	24.9
no	82.0	75.1

Source: K-SOFHE Rounds 1 and 2
* Statistically Different at $p < .05$
[a] "Other Insurance Type" has been dropped
MD = Provider; R2=Round 2

Similar comparisons of characteristics at baseline were made between children who remained in the sample in Round 3 and eligible children who were lost to follow-up that year. As shown in Tables 11 and 12, children lost to follow-up in Round 3 were more likely to be poor and come from non-traditional or "other" types of families including multigenerational or children with extended relatives. Their caretakers also tended to be younger and less educated than caretakers of children who remained in the sample. There did not appear any differences by race/ethnicity or the employment status of the child's caretaker. Children who were lost to follow-up in Round 3 had a worse overall access profile than children who were represented. For example, they were more likely to be uninsured (as were their caretakers) and lack a usual source of care than children who remained in the sample (See Table 12).

Table 11
Unweighted Comparison of In-Scope Children Lost to Follow-Up with Children who remained in Round 3 on Sociodemographic Measures at Baseline

	Remained in R3 n=956 %	In-Scope Loss in R3 n=306 %
Child Age*		
0 < 5 years	31.4	33.8
5 < 12 years	33.0	45.6
12 < 17 years	35.6	20.6
Child Gender		
male	50.7	52.0
female	49.3	48.0
Child Health Status		
excellent	45.6	40.6
very good	32.5	34.5
good	17.7	17.8
fair/poor	4.2	7.2
Family Structure*		
2 parents	57.2	42.2
1 parent	31.2	30.7
other[a]	11.6	27.1
Family Poverty Status*		
≤ 100%	40.4	47.2
101 ≤ 200%	25.3	25.4
201 ≤ 400%	22.6	24.1
> 400%	11.5	3.3
Number of Children*		
1 child	18.8	26.5
2 children	40.1	38.2
≥ 3 children	41.1	35.3
Age of Caretaker*		
17 < 25 years	13.6	16.7
25 < 35 years	40.5	40.2
35 < 50 years	42.9	37.3
≥ 50 years	3.0	5.9
Caretaker Education*		
≤ 8th grade	5.8	9.3
9th ≤ 12 grade	56.6	62.3
≥ some college	37.5	28.3
Caretaker Race/Ethnicity		
white, non-Hispanic[b]	63.1	58.8
black, non-Hispanic	21.4	20.9
Hispanic	15.5	20.3
Caretaker Employment Status		
in labor force[c]	53.1	50.7
not in labor force	46.9	49.3

Source: K-SOFHE Rounds 1-3
Statistically Different at p < .05
R3 = Round 3

[a] Families consisting of adults other than parents with children, e.g. grandparent(s)
[b] "Other" race has been combined with non-Hispanic, whites
[c] Works at a "job" or in a business for pay.

Table 12
Unweighted Comparison of In-Scope Children Lost to Follow-Up with Children who remained in Round 3 on Access Measures at Baseline

	Remained in R3 n=956 %	In-Scope Loss in R3 n=306 %
Child Insurance Type[a]*		
Medicaid	46.0	48.0
private	36.8	28.0
uninsured	17.2	24.0
Child Usual Source of Care (USC)*		
yes	92.8	85.1
no	7.2	14.9
Duration of Child's USC*		
< 1 year	21.0	31.5
1 to 5 years	51.5	48.9
> 5 years	27.5	19.6
Solo MD or Private Clinic is Child's USC*		
yes	51.8	40.8
no	48.2	59.2
Specific Provider at Child's USC*		
yes	75.5	69.1
no	24.5	30.9
Difficulty Obtaining Care for Child		
yes	7.2	8.9
no	92.8	91.2
Satisfaction with Access to Care for Child*		
very satisfied	54.3	39.7
generally satisfied	32.7	43.5
somewhat dissatisfied	5.3	9.5
very dissatisfied	7.7	7.4
Caretaker Insurance Type[a]*		
Medicaid	32.2	36.9
private	40.2	30.6
uninsured	27.6	32.6
Caretaker USC		
yes	83.9	79.2
no	16.1	20.8
Duration of Caretaker's USC*		
< 1 year	15.5	30.8
1 to 5 years	44.9	43.3
> 5 years	39.6	25.9
Solo MD/Private Clinic is Caretaker's USC*		
yes	48.1	37.7
no	51.9	62.3
Difficulty Obtaining Care for Children		
yes	18.7	22.6
no	81.3	77.5

Source: K-SOFHE Rounds 1, 2, and 3

* Statistically Different at $p < .05$; [a] "Other Insurance Type" has been dropped;

MD = Provider; R3=Round 3

Measurement

Dependent Variables

The primary dependent variable in this study measures the family's experience in obtaining health care for each individual in the family. A knowledgeable adult in the family was asked if in the preceding year each person "needed but did not get care, or had difficulty getting care" of any of the following types: general physician, emergency medical, a specialty doctor, home health care, rehabilitation services including speech or physical therapy, mental health services, or medications. This measure has been used extensively in prior research including large-scale national surveys in order to capture the ability of individuals to obtain timely health services.[19, 20, 38, 147, 148, 200-202] If the respondent reported a barrier to care, he or she was also asked if that barrier led to adverse health effects for the family member.

For the purposes of this study, usual source of care was assessed in six ways: (1) whether or not the individual had a usual source of care, (2) duration of the relationship with that usual source, (3) type of care that the individual used, (4) whether or not the regular source of care was a specific provider rather than a specific place, (5) ease of obtaining an appointment on short notice, and (6) difficulty getting to the usual source of care. The terminology of these items is similar or identical to other large, nationally-representative surveys of the U.S. population.[56, 73, 147]

Respondents were also asked to rate their overall satisfaction with being able to get medical care when it was needed for each person in the family. Possible responses ranged from very satisfied to very dissatisfied. Attitudinal questions asked respondents to rate their ability to obtain medical care and their general satisfaction with medical care compared to one year ago. Others addressed worry about getting care in the future, problems communicating with providers, time with providers, delays in getting needed medical care for the family as a whole, and lack of information to help prevent health problems.

Independent Insurance Variables

The type of coverage was obtained at time of interview for each member of the family. Options included private, Medicaid, uninsured, or other. Summary variables were constructed to capture the relationship between child and caretaker insurance status. For instance, the child-caretaker insurance status summary variable has the following values: 1. child insured, caretaker insured; 2. child insured, caretaker uninsured; 3. child uninsured, caretaker insured; 4. child uninsured, caretaker uninsured. Variables that captured change in health insurance status and type over time were also constructed for longitudinal analyses.

Sociodemographic Variables

Since many financial and non-financial factors affect parents' ability to obtain care for children, a number of control variables were included in this study. Family-level control variables included family structure, poverty status, and number of children. Parent-level variables included age, gender, health status, education, race/ethnicity, and employment status. Child-level variables included insurance status, age, gender, health status and race/ethnicity.

Approach to Analysis

Cross Sectional Analyses

The first step in the analysis of the K-SOFHE data was to construct analytic files from the raw data provided by NORC and conduct univariate analysis on all variables to detect any anomalies or missing values. Categorical variables were described by frequencies and continuous variables were explored with the use of distributions, box-plots, and stem-and-leaf plots. Such tools were used to identify any outliers caused by data entry or transfer errors. Frequency distributions were also generated for all continous measures to aid the identification of cut-off values for the construction of categorical variables. Data manipulation and initial univariate analyses were conducted using SAS statistical software release 6.12.

Bivariate Cross-Sectional Analyses

The K-SOFHE employs a multistage probability sampling design very similar to the National Health Interview Survey, which involves stratification, clustering, and over-sampling techniques.[198] Standardized weights were used in all analyses to account for over sampling. The design effect resulting from the use of clusters in sample selection was estimated and variance inflated using the Taylor series approximation employed by Research Triangle Institute's Professional Software for Survey Data Analysis (SUDAAN).[203] Adjustments in the variance and standard errors had no to little effect on the overall findings, and estimates of the odds remained the same after correcting for sampling error.

The weighted distributions of key sociodemographic variables and their relationship to difficulty obtaining health care for children, the "barrier to care" access outcome variable, at baseline are presented in Table 13. According to the K-SOFHE, only 3.3 percent of children in were in poor or fair health status in 1995-96. This finding is similar to recent published results using the 1996 Medical Expenditure Panel Survey (MEPS), which showed that 3.3 percent and 0.6 percent of children in the United States were in fair and poor health, respectively.[76] Children in poor or fair health were many times more likely to experience difficulty in obtaining care than healthier children. For instance, less than two percent of children in "excellent" health experienced difficulty obtaining care as compared to more than one-third of children in poor health.

Two-parent families constituted over 70 percent, one-parent families 19.2 percent, and "other" type of families 9.3 percent of the K-SOFHE baseline cohort. The "other" family type included multigenerational families or families with non-parent caretakers of children. Single-parented families were approximately twice as likely to experience difficulty in obtaining health care for their children in the previous year than two-parented and other types of families. Similarly, families with incomes at or below the poverty line were more likely to experience difficulty in obtaining care for their children. Nearly 10 percent of poor families compared to less than one percent of families with income greater than 400 percent poverty experienced difficulty.

Table 13
Sociodemographic Characteristics of U.S. Population, 1995-96, N=1,331

Study Population	Percent of Total Population	Percent of Difficulty Getting Care for Children	P[a]
Child Age			
0 < 5 years	27.2	4.5	-
5 < 12 years	42.3	5.1	NS [d]
12 < 18 years	30.5	5.7	NS
Child Gender			
male	51.2	5.7	-
female	48.8	4.4	NS
Child Health Status			
excellent	54.9	1.9	-
very good	30.3	5.3	.0001
good	11.5	10.0	.0001
fair/poor	3.3	34.0	.0001
Family Structure			
2 parents	71.5	4.0	-
1 parent	19.2	9.3	.0001
other[b]	9.3	4.7	NS
Family Poverty Status			
≤ 100%	18.4	9.8	-
101 ≤ 200%	21.4	5.4	.0001
201 ≤ 400%	40.1	5.0	.0001
> 400%	20.1	0.8	.0001
Number of Children			
1 child	22.8	5.7	-
2 children	42.1	5.3	NS
≥ 3 children	35.1	4.5	NS
Age of Caretaker			
17 < 25 years	6.8	8.1	-
25 < 35 years	34.2	4.4	.01
35 < 50 years	54.8	5.4	NS
≥ 50 years	4.2	2.0	NS
Caretaker Education			
≤ 8th grade	4.2	6.3	-
9th ≤ 12 grade	45.8	4.9	NS
≥ some college	50.0	5.3	NS
Caretaker Race/Ethnicity			
white, non-Hispanic	72.5	5.1	-
black, non-Hispanic	15.2	4.1	NS
Hispanic	12.3	6.5	NS
Caretaker Employment Status			
in labor force[c]	65.2	4.9	-
not in labor force	34.8	5.3	NS

SOURCE: Kaiser Survey of Family Health Experiences (K-SOFHE), 1995-96.

[a] Statistical significance of the relationship between barrier to care for child and each sociodemographic category compared to reference group.

[b] Families consisting of adults other than parents with children, e.g. grandparent(s)

[c] Works at a "job" or in a business for pay. [d] NS=Not significant.

Although the K-SOFHE over sampled families with Medicaid coverage or no coverage at all, the weighted population estimates for these insurance categories among children are slightly lower than other national surveys. For instance, as shown in Table 14, Medicaid covered approximately 18.3 percent of all children at time of interview in 1995-96. According to the 1996 MEPS, however, 20.8 percent of children had Medicaid during 1996.[76] An analysis of the March 1997 Current Population Survey also found 21.8 percent of all children had Medicaid in 1996.[48] Similarly, the K-SOFHE's estimate of the proportion of children who were uninsured in 1995/96 is somewhat lower than other national estimates using the 1996 MEPS and CPS.

This variation in national estimates could potentially be explained by differences in the period of reference. For instance, the MEPS health insurance estimates reflect coverage during the first half of 1996, while the CPS asks about insurance coverage over the entire past year.[148, 204] In any case, consistent with the literature, children who were uninsured in 1995/96 were more likely to difficulty obtaining care than privately and publicly insured children. However, public insurance did not guarantee children equitable access to care compared to their privately insured counterparts. Nearly 10 percent of children with Medicaid experienced difficulty obtaining care compared to only 3.1 percent of privately insured children.

Over 93 percent of children in the K-SOFHE had a regular source of care at baseline, but children without one were nearly five times for likely to not receive care when they needed it. For instance, four percent of children with a usual source of care experienced difficulty or delay in obtaining timely health care compared to 19 percent of children with no usual source of care. Of those children with a usual source of care, 17.1 percent were with that usual source of care for less than one year.

Medicaid covered a somewhat lower proportion of caretakers than it did children. Also, a slightly higher proportion of caretakers was uninsured compared to children (12.4% vs. 8.7%, respectively). Nearly 13 percent of caretakers did not have a usual source of care, and those without a usual source were more likely to encounter difficulty in receiving care when needed. For instance, 11.3 percent of caretakers without a usual source of care had difficulty or did not obtain timely care for their children compared to 4.2 percent of caretakers with a usual source of care.

The nature of the caretaker's usual source of care also was associated with ability to obtain health care for children. Approximately three percent of caretakers whose usual source of care was a solo physician or private clinic experienced difficulty in getting care for their children in 1995/96. Six percent, however, of caretakers whose usual source of care was some other type of health care organization experienced this difficulty for their child's care. Over 80 percent of caretakers said that they had a specific provider of care at their usual source. Of those with a particular provider (vs. a general facility), 3.7 percent reported difficulty in obtaining care for their children. Among those who did not have a particular provider, however, 6.5 percent experienced difficulty.

Similarly, caretakers' own perceived ability to obtain care was correlated with their experiences in getting care for their children. Nearly 24 percent of caretakers who experienced difficulty in getting their own care also experienced difficulty in obtaining care for their children. Only 2.5 percent of caretakers who did not encounter delay or non-receipt of their own care experienced delay or difficulty obtaining care for their children.

Table 14
Access Profile of U.S. Population, 1995-96, N=1,331,

Study Population	Percent of Total Population	Percent of Difficulty in Getting Care for Children	P[a]
Child Insurance Type			
Medicaid	18.3	9.7	.0001
private	73.0	3.1	-
uninsured	8.7	11.4	.0001
Child Usual Source of Care (USC)			
yes	93.4	4.1	-
no	6.6	19.0	.0001
Duration of Child's USC			
< 1 year	17.1	4.2	-
1 to 5 years	50.3	3.6	NS[b]
> 5 years	32.6	5.1	NS
Solo MD or Private Clinic is Child's USC			
yes	59.2	4.0	-
no	40.8	4.4	NS
Specific Provider at Child's USC			
yes	79.4	3.6	-
no	20.6	6.3	.10
Caretaker Insurance Type			
Medicaid	13.1	7.7	.0001
private	74.6	3.4	-
uninsured	12.4	12.1	.0001
Caretaker USC			
yes	87.3	4.2	-
no	12.7	11.3	.004
Duration of Caretaker's USC			
< 1 year	11.4	4.3	-
1 to 5 years	48.9	3.9	NS
> 5 years	39.7	4.8	NS
Solo MD or Private Clinic is Caretaker's USC			
yes	56.9	2.9	-
no	43.1	6.0	.006
Specific Provider at Caretaker's USC			
yes	80.5	3.7	-
no	19.5	6.5	.03
Difficulty Obtaining Care for Caretaker			
yes	12.2	23.7	
no	87.8	2.5	.0001

SOURCE: Kaiser Survey of Family Health Experiences (K-SOFHE), 1995-96.

[a] Statistical significance of the relationship between barrier to care for child and each access category compared to reference group.

[b] NS=Not statistically significant.

The second phase of cross-sectional analyses involved the categorization of child-caretaker dyads with respect to insurance status. As shown in Table 15, 67.8 percent (unweighted), or 903 children, in the K-SOFHE had health insurance at baseline and had caretakers who were also insured either through an employer, Medicaid, or some other source. However, 171 children, or 12.8 percent, were insured that year but had uninsured caretakers. Relatively few children in the data set (3.2 percent) were uninsured and had insured parents. Two hundred and fourteen children, 16 percent of all children in the data set at baseline, were uninsured and had uninsured caretakers.

Among insured children, uninsured caretakers were more likely to be single parents, young, poor, ethnic minority, and work part time than their insured peers. For instance, not only were insured children with uninsured caretakers younger themselves, but their uninsured caretakers were younger than insured caretakers. Only 41.7 percent of insured children with uninsured caretakers came from two-parent families compared to nearly three-quarters of insured children with insured caretakers. Likewise, nearly 59 percent of insured children with uninsured caretakers came from families below the poverty line while 14.5 percent of insured children with insured caretakers were poor. Three-quarters of children with health insurance who had insured caretakers were white, non-Hispanic compared to just over half of insured children with uninsured caretakers.

Uninsured caretakers tended to be younger than insured caretakers regardless of their children's health insurance status. For instance, 12.5 percent of uninsured children with uninsured caretakers had caretakers who were under 25 years of age compared to just 5.1 percent of uninsured children with insured caretakers. More than two-thirds of uninsured children with uninsured caretakers came from two-parent homes compared to just over 42 percent of uninsured children with insured caretakers. Over 70 percent of uninsured children with insured caretakers had caretakers that were actively involved in the labor force, and nearly all of these caretakers worked full time.

Table 15
Sociodemographic Characteristics of Child-Caretaker Dyads by Insurance Status, 1995-96

	Child Insured		Child Uninsured	
	CT Insured Weighted % N=903	CT Uninsured Weighted % N=171	CT Insured Weighted % N=43	CT Uninsured Weighted % N=214
Child Age				
0 < 5 years	26.7	46.4[a]	14.4[b]	23.1[b]
5 < 12 years	42.5	40.5	50.9	39.0
12 < 18 years	30.8	13.2	34.7	37.8
Child Gender				
male	50.8	58.9[a]	41.5[b]	52.2
female	49.2	41.1	58.5	47.8
Child Health Status				
excellent	57.4	39.3	35.6	38.3[a]
very good	30.2	30.4	36.7	31.0
good	9.9	21.3	22.9	22.9
fair/poor	2.6	9.0	4.8	7.7
Family Structure				
2 parents	74.1	41.7[a]	42.3	67.5[a,b]
1 parent	18.1	38.3	29.8	16.3
other[1]	7.7	20.1	27.9	16.2
Family Poverty Status				
≤ 100%	14.5	58.7[a]	26.1[a]	37.0[a,b]
101 ≤ 200%	19.2	30.6	43.7	37.8
201 ≤ 400%	43.4	9.6	30.3	23.3
> 400%	23.0	1.1	0.0	1.9
Age of Caretaker				
17 < 25 years	5.0	28.6[a]	5.1[b]	12.5[a,b]
25 < 35 years	33.5	39.3	49.7	36.2
35 < 50 years	57.3	29.0	39.0	46.3
≥ 50 years	4.2	3.1	6.2	4.9
Caretaker Education				
≤ 8th grade	3.2	9.7[a]	0.0[a]	13.9[a,c]
9th ≤ 12 grade	42.5	68.6	78.7	62.5
≥ some college	54.3	21.7	21.3	23.5
Caretaker Race/Ethnicity				
white, non-Hispanic	75.3	53.5[a]	47.1	58.4[a]
black, non-Hispanic	14.1	25.6	36.1	16.1
Hispanic	10.6	20.9	16.8	25.5
CT in Labor Force				
in labor force[c]	65.7	55.3	71.1	64.8
not in labor force	34.3	44.7	28.9	35.2
CT FT/PT				
full-time worker	73.3	56.6[a]	97.6[a,b]	55.9[a,c]
part-time worker	26.7	43.4	2.4	44.1

SOURCE: Kaiser Survey of Family Health Experiences, 1995-1996

NOTE: Statistical differences at p < .05

[a] Statistically different from child insured/parent insured. [b] Statistically different from child insured/parent uninsured. [c] Statistically different from child uninsured/parent insured.

CT= Child's Caretaker; FT=Full time; PT=Part time

1 Families consisting of adults other than parents with children, e.g. grandparent(s) with grandchild(ren).

As shown in Table 16, the insurance status of caretakers of insured children is consistently associated with a number of indicators related to ability to obtain health care for the child. For instance, among those with a usual source of care, 35.4 percent of insured children with uninsured caretakers have been with that usual source of care for less than one year compared to 16.1 percent of insured children with insured caretakers. Less than 70 percent of insured children with uninsured caretakers identified a specific provider at their usual source of care compared to 81 percent of insured children with insured caretakers. Similarly, nearly 30 percent of insured children with uninsured parents were affiliated with usual sources of care where obtaining an appointment was somewhat difficult to impossible compared to 16.8 percent of insured children with insured caretakers. The uninsured caretaker was more likely to report difficulty getting needed care for her child and be less satisfied with her child's access to care in general compared to the insured caretaker.

Similar differences in ability to obtain care for children were found for uninsured children by their caretaker's insurance status. While uninsured children generally had worse overall access to care than insured children regardless of their caretaker's insurance coverage, uninsured children with insured caretakers tended to do better than uninsured children with uninsured caretakers. For instance, 12.1 percent of uninsured children with uninsured caretakers experienced difficulty in obtaining care at baseline while 7.7 percent of uninsured children with insured caretakers reported difficulty. However, 12.2 percent of *insured* children with uninsured caretakers also had difficulty getting needed health care that year. In fact, a smaller proportion of uninsured children with insured caretakers experienced difficulty than insured children with uninsured caretakers (12.2% vs. 7.7%, respectively).

Table 16

Access Profile of Child-Caretaker Dyads by Insurance Status, 1995-96

	Child Insured		Child Uninsured	
	CT Insured Weighted % N=903	CT Uninsured Weighted % N=171	CT Insured Weighted % N=43	CT Uninsured Weighted % N=214
Child Usual Source of Care (USC)				
yes	95.1	91.9	67.1$^{(a\ p=.07)}$	78.6^{a,b}
no	4.9	8.1	32.9	21.4
Duration of Child's USC				
< 1 year	16.1	35.4^{a}	8.4^{b}	19.8^{b}
1 to 5 years	50.1	55.1	41.0	50.7
> 5 years	33.9	9.4	50.5	29.6
Solo MD/Private Group Practice is Child's USC				
yes	61.3	51.6	34.7	37.8^{a}
no	38.7	48.4	65.3	62.2
Specific Provider at Child's USC				
yes	81.0	69.4$^{(a\ p=.09)}$	83.5	62.7^{a}
no	19.0	30.6	16.5	37.3
Difficulty Obtaining an Appointment at Child's USC				
not at all difficult	83.2	70.5$^{(a\ p=.08)}$	76.3	70.0
somewhat difficult to impossible	16.8	29.5	23.7	30.0
Difficulty Getting Care for Child				
yes	4.1	12.2(p=.06)	7.7	12.1^{a}
no	95.9	87.8	92.3	87.9
Caretaker's Satisfaction with Access to Care for Child				
very satisfied	66.0	36.2^{a}	34.1^{a}	20.1^{a,b}
generally satisfied	30.3	44.9	45.7	35.5
somewhat dissatisfied	2.4	9.5	10.2	10.4
very dissatisfied	1.3	9.4	10.1	34.0

SOURCE: Kaiser Survey of Family Health Experiences, 1995-1996

NOTE: Statistical differences at $p < .05$; CT=Caretaker

[a] Statistically different from child insured/CT insured. [b] Statistically different from child insured/CT uninsured

Multivariate Cross-Sectional Analyses

The "GLIMMIX" macro for fitting generalized linear mixed models using "PROC MIXED" and the Output Delivery System (ODS) in SAS allowed for multivariate analyses using logistic regressions in the second manuscript.[205] PROC

MIXED in SAS provides a variety of covariance structures to address correlation of clusters used in sampling. For instance, K-SOFHE families were selected using a hierarchical sampling procedure starting with primary sampling units (PSUs), segments within those PSUs, and then households. Each level of hierarchy possibly could have introduced an additional source of variability and correlation.

A "mixed linear model" allows data to exhibit correlation and nonconstant variability. The primary assumptions underlying analyses performed by PROC MIXED in SAS are as follows[206]:

1. The data are normally distributed (Gaussian).
2. The means (expected values) of the data are linear in terms of a certain set of parameters.
3. The variances and covariances of the data are in terms of a different set of parameters, and they exhibit a structure matching one of those available in PROC MIXED.

Since normally distributed data can be modeled entirely in terms of their means and variances/co-variances, the fixed- and random-effects parameters in a mixed linear model actually specify the complete probability distribution of the data. The fixed-effects parameters are associated with known explanatory variables, as in the standard linear model. The random-effects parameters are additional unknown random variables assumed to impact the variability of the data, and the variances of the random-effects parameters become the covariance parameters.[206, 207] PSU and SEGMENT variables in the K-SOFHE data set were used to establish the random-effects parameters. The underlying assumption of multivariate analyses in the second manuscript is that intra-family correlation is constant within sampling segments.

Multivariate logistic regression was used to model the likelihood of experiencing difficulty in obtaining care for children and to control for potential confounding. The inclusion of intervening variables in the multivariate model was based on hypothesized relationships between the intervening, independent, and dependent variables. However, in order to avoid excessive colinearity between predictor variables in the model, a correlation matrix was produced using Spearman's rank order correlation coefficient.[207]

As shown in Table 17, child and caretaker age were highly correlated r_s=0.52, $p < .0001$ as were their reported health status r_s=0.49, $p < .0001$. Family poverty status was significantly correlated with a number of family characteristics. For instance, poverty was significantly associated with family structure, number of children, race, age of child and caretaker, caretaker educational attainment, and child and caretaker physical health status. The health care insurance status of children and their caretakers was also highly correlated (r_s=.58, $p < .0001$). The variable involving difficulty getting needed care was significantly associated with measures of health status for children and their caretakers, poverty, and child and caretaker insurance status. Variables that were highly correlated (i.e. >.35) were not entered into a multiple regression analysis together.

Table 18 presents a multivariate logistic regression model that predicts the likelihood of encountering difficulty getting needed care for only insured children. In this model, six independent variables include caretaker insurance status, child gender, child age, family structure, caretaker race/ethnicity, and caretaker educational attainment. Caretaker gender was not included because of the small number of uninsured men with insured children in the sample. Controlling for other variables in the model, uninsured caretakers were more than two and a half times as likely to report difficulty getting needed care for their insured children than were insured caretakers (OR=2.59, 95% CI=1.23,5.43). Likewise, controlling for caretaker insurance coverage and other factors in

Table 17
Spearman r Correlations

	CT Age	Family Poverty Status	CT Educ.	Child Health Status	CT Health Status	CT Race/ Ethnic.	Child Gender	Family Struct.	Difficult Care Child	Child Insur. Status	CT Insur. Status
Child Age	0.52[d]	0.16[d]	0.04	0.04	0.07[b]	-0.02	0.02	-0.01	0.02	0.12[d]	-0.02
Caretaker (CT) Age	1.00	0.29[d]	0.07[d]	-0.01	0.07[b]	-0.08[a]	0.01	-0.05	0.04	0.02	-0.10[c]
Poverty Status	--	1.00	0.35[d]	-0.25[d]	-0.33[d]	-0.34[d]	-0.01	-0.39[d]	0.12[d]	-0.03	-0.16[d]
CT Education	--	--	1.00	-0.18[d]	-0.24[d]	-0.20[d]	0.01	-0.14[d]	0.00	-0.14[d]	-0.20[d]
Child Health Status	--	--	--	1.00	0.49[d]	0.14[d]	-0.05	0.14[d]	-0.17[d]	0.09[d]	0.12[d]
CT Health Status	--	--	--	--	1.00	0.13[d]	0.00	0.22[d]	-0.14[d]	0.13[d]	0.21[d]
CT Race	--	--	--	--	--	1.00	0.03	0.23[d]	0.03	0.05	0.07[a]
Child Gender	--	--	--	--	--	--	1.00	0.01	0.03	0.01	-0.05
Family Structure	--	--	--	--	--	--	--	1.00	-0.02	-0.07[b]	-0.01
Difficult Care Child	--	--	--	--	--	--	--	--	1.00	-0.07[a]	-0.10d
Child Insurance	--	--	--	--	--	--	--	--	--	1.00	-0.67
CT Insurance Status	--	--	--	--	--	--	--	--	--	--	1.00

Source: K-SOFHE, 1995-96
CT=Caretaker; Educ.=Education; Ethnic.=Ethnicity; Struct.=Structure; Insur.=Insurnace
a= $p < .05$; b= $p < .01$; c= $p < .001$; d= $p < .0001$

the model, children from single-parent homes were over two times as likely to have experienced delayed or unmet care in the past year than children from two-parent homes (OR=2.88, 95% CI=1.78,5.00).

Table 18
Adjusted* Odds Ratio of Experiencing Difficulty in Obtaining Care for Insured Children by Caretaker Insurance Status and Control Variables, 1995-96

Population Characteristics	n	Adjusted Odds Ratio	95% CI
Caretaker Insurance Status			
insured	903	1	-
uninsured	171	2.59	1.23,5.43
Child Gender			
male	549	1	-
female	525	1.13	0.83,2.05
Child Age			
0 < 5 years	362	1	-
5 < 12 years	434	0.90	0.51,1.60
12 < 18 years	278	1.46	1.26,2.70
Family Structure			
2 parents	548	1	-
1 parent	367	2.88	1.78,5.00
other	159	0.97	0.38,2.47
Caretaker Race/Ethnicity			
white, non-Hispanic	672	1	-
black, non-Hispanic	243	0.81	0.37,1.75
Hispanic	159	0.70	0.30,1.62
Caretaker Education			
≤ 8th grade	59	1.08	0.28,4.23
9th ≤ 12 grade	594	1.02	0.60,1.75
≥ some college	401	1	-

SOURCE: K-SOFHE 1995-96
* Adjusted for all other variables in the regression model.

Table 19 introduces poverty status into the multivariate logistic model. When poverty status is considered, caretaker insurance coverage becomes only marginally statistically significant at 95 percent confidence (OR= 2.06, 95% CI 0.99,4.30, p=.05). Children from single parent families continue to have higher risk of having difficulty getting needed care (OR=2.15, 95% CI=1.22,3.78), and poverty status is highly predictive of encountering this as well. For instance, children with family incomes above

200 percent poverty were only a quarter as likely (OR=.25, 95% CI=0.12,0.52) to encounter difficulty in getting care than children at or below the poverty line.

Table 19
Adjusted* Odds Ratio of Experiencing Difficulty in Obtaining Care for Insured Children by Caretaker Insurance Status and Control Variables, 1995-96

Population Characteristics	n	Adjusted Odds Ratio	95% CI
Caretaker Insurance Status			
insured	903	1	-
uninsured	171	2.06	0.99,4.30
Child Gender			
male	549	1	-
female	525	1.41	0.92,2.17
Child Age			
0 < 5 years	362	1	-
5 < 12 years	434	1.05	0.61,1.83
12 < 18 years	278	1.97	1.09,3.56
Family Structure			
2 parents	548	1	-
1 parent	367	2.15	1.22,3.78
other	159	0.73	0.29,1.85
Caretaker Race/Ethnicity			
white, non-Hispanic	672	1	-
black, non-Hispanic	243	0.58	0.26,1.28
Hispanic	159	0.57	0.26,1.26
Family Poverty Status			
≤ 100% Poverty	451	1	-
101 ≤ 200% Poverty	238	0.38	0.19,0.77
> 400% Poverty	368	0.26	0.12,0.52

SOURCE: K-SOFHE 1995-96

* Adjusted for all other variables in the regression model.

Table 20 shows that family poverty status was highly associated with insurance status of the caretaker. For instance, for insured children, 19 percent of caretakers at or below the poverty line were uninsured compared to only 0.3 percent of caretakers above 400 percent poverty. Similarly, 8.6 percent of insured children at or below the poverty line encountered difficulty in obtaining care compared to only 0.8 percent of insured children above 400 percent poverty. These relationships also persisted when all children were considered regardless of insurance status.

Table 20

Caretaker Insurance Status and Difficulty in Obtaining Health Care for Children by Family Poverty Status for Insured and All Children, 1995-96

	Child Insured n=1074		All Children n=1331	
Family Poverty Status	CT Uninsured Weighted %	Difficulty with Getting Care Weighted %	CT Uninsured Weighted %	Difficulty with Getting Care Weighted %
≤ 100%	19.0	8.6	30.2	9.8
101 ≤ 200%	8.4	4.3	19.7	5.4
201 ≤ 400%	1.3	4.9	5.3	5.0
> 400%	0.3	0.8	0.9	0.8

SOURCE: K-SOFHE 1995-96

When child health status is introduced to the multivariate logistic model, however, both poverty status and parental health insurance coverage become statistically insignificant. Table 21 presents the relationship between family poverty level and child health status for all children. Just over 41 percent of all children at or below the federal poverty line were in excellent health compared to more than two-thirds (67.4%) of children with families above 400% poverty. Nearly eight percent of poor children were in poor or fair health in 1995-96 compared to one percent of children living above 400% poverty.

Table 21

Weighted Percent of Family Poverty Status by Child Health Status for All Children, 1995-96.

	Child Health Status n=1331			
Family Poverty Status	Excellent	Very Good	Good	Fair/Poor
≤ 100%	41.2	31.7	19.4	7.7
101 ≤ 200%	42.5	39.6	16.2	1.7
201 ≤ 400%	61.1	27.1	8.5	3.2
> 400%	67.4	26.3	5.3	1.0

SOURCE: K-SOFHE 1995-96

Table 22 illustrates the relationship of child health status and caretaker insurance coverage as well as with difficulty in obtaining care for children. Approximately 3.7 percent of children in excellent health had caretakers who were uninsured, but more than 16 percent of insured children in poor or fair health had uninsured caretakers. Similarly, less than two percent of insured children in excellent health encountered difficulty obtaining care compared to over 36 percent of insured children in fair or poor health. These general trends also persisted when all children were considered irrespective of their insurance status.

Table 22
Caretaker Insurance Status and Difficulty in Obtaining Health Care for Children by Child Health Status for Insured and All Children, 1995-96

	Child Insured n=1074		All Children n=1331	
Child Health Status	CT Uninsured Weighted %	Difficulty with Getting Care Weighted %	CT Uninsured Weighted %	Difficulty with Getting Care Weighted %
excellent	3.7	1.5	8.4	1.9
very good	5.3	5.1	12.1	5.3
good	10.8	8.4	23.1	10.0
fair/poor	16.3	36.7	29.9	34.0

SOURCE: K-SOFHE, 1995-96

In sum, low-income children were more likely to be in poor or fair health than wealthier children. Poor children, however, were also more likely to have uninsured caretakers and experience difficulty in obtaining timely care for their health needs than their wealthier peers. While all three factors seem to have contributed to the likelihood of encountering difficulty in obtaining care, perceived need measured by the child's subjective health status was the strongest predictor of delay or non-receipt of health care for children.

Longitudinal Analysis

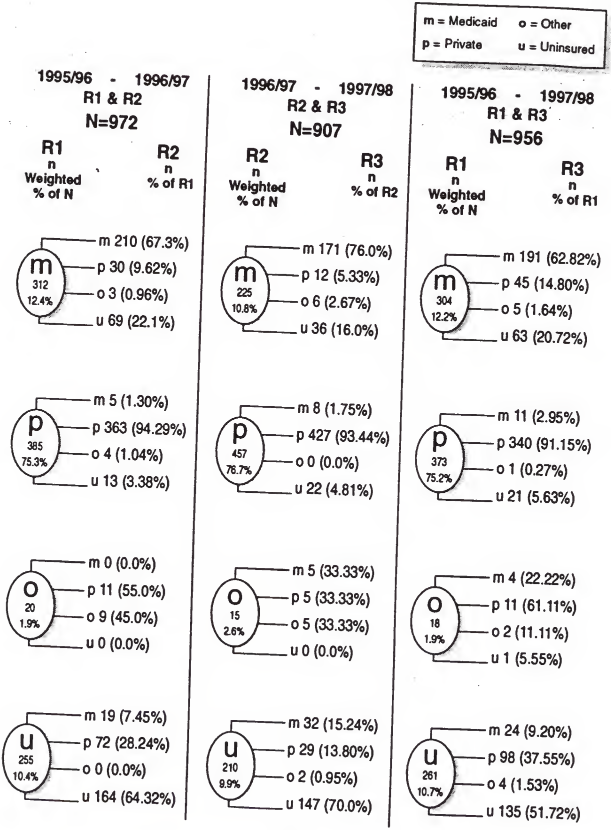
The first step to assess change in health insurance coverage and access to care over time was to pool analytic files from each of the three rounds of data. Data files were linked using the personal identifier of individual eligible children who were eligible in each round (i.e. < 18 years old). Change in health insurance status was first examined between rounds and included all children and their caretakers who were present in each of the two rounds under study. Figure 6 shows transition in caretaker health insurance coverage for children who were included in Rounds 1 and 2, 2 and 3, and 1 and 3.

At Round 1, for instance, 312 children or 12% of all children had caretakers insured by Medicaid. By round two, one-third of these children had caretakers who were no longer covered by Medicaid. This was composed of the nearly 10 percent of children whose caretakers were covered by Medicaid in Round 1 moving to private insurance and over 22 percent who became uninsured. Looking at Medicaid coverage at two points in time two years apart (Round 1 and Round 3), we see that only a slightly lower proportion of children had caretakers who remained in Medicaid than after only one year.

Private insurance coverage was considerably more stable for children's caretakers between rounds. For example, more than 94 percent of children's caretakers covered by private insurance remained privately insured one year after baseline. Over 90 percent of children who remained in the sample by Round 3 had caretakers privately insured in both Round 1 and Round 2.

Over 10 percent of children in the United States had uninsured caretakers in 1995/96. By Round 2, approximately 35 percent of these children had caretakers who joined Medicaid (7.45%) or became privately insured (28.2%). Slightly over half of all children who participated in Rounds 1 and Round 3 had caretakers who were uninsured at both points in time.

FIGURE 6 CHANGE IN CARETAKER HEALTH INSURANCE TYPE FOR ALL CHILDREN



Change in children's health insurance coverage was then assessed in relation to change in their caretaker's coverage for children present in Rounds 1, 2 and 3. Looking at just those children with Medicaid or private coverage at Round 1 who participated in all three rounds, we see in Table 23 that 64 (12%) became uninsured at some point during the two-year period. More than 17 percent of children had a caretaker who went from "insured" by Medicaid or private insurance in Round 1 to "uninsured" in either Round 2 or Round 3. More than 87 percent of children who lost health insurance during this time period also had a caretaker who lost health insurance, and less than two percent of children whose caretakers remained insured lost health insurance themselves.

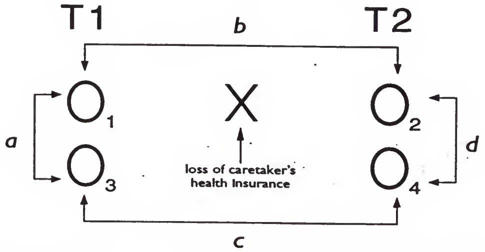
Table 23
Change in Children's Insurance Status by Change in Caretakers' Insurance Status for Children Represented in R1, R2, and R3, 1995-1998

Row Percent Column Percent	Child Health Insurance	
Caretaker Health Insurance	Change n=64	Constant n=464
Change n=93	60.2 87.5	39.8 8.0
Constant n=435	1.8 12.5	98.2 92.0

SOURCE: K-SOFHE, 1995-1998

The impact of caretaker loss of insurance coverage on ability to obtain health care for children was examined using the model presented in Figure 7. Since loss in caretaker insurance was highly correlated with loss of child health insurance, it was necessary to control for change in child insurance coverage during the three-year study period. Therefore, only caretakers with children who were consistently insured were considered for this longitudinal analysis. The analysis considered the insurance status of the caretaker at pairs of consecutive Rounds. A pair of observations was included in the analysis whenever (1) the child's caretaker was either privately or publicly insured at the earlier interview, "T1," and (2) data were collected in the next Round or "T2." Since the K-SOFHE includes three interview periods or Rounds, those insured children with insured caretakers at the first of each pair of data points contributed two observations to the analysis (Round 1 to Round 2, and Round 2 to Round 3).

FIGURE 7 LONGITUDINAL ANALYSIS OF LOSS IN CARETAKER HEALTH INSURANCE



In this case, children were categorized into two groups: caretakers lost insurance or caretakers did not lose insurance. Each group was compared at T1 in terms of delay in getting needed care (a). These changes were assessed between T1 and T2 for each group (b and c). Finally, the proportions that had difficulty obtaining health care for each group were compared at T2 (d).

Chapter 5

(Manuscript 1)

Health Insurance Coverage in American Families[2]

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[2] This paper was co-authored by Judith D. Kasper, Catherine Hoffman, and Yunhwan Lee.

ABSTRACT: This Data Watch examines family-level patterns of health insurance coverage in the United States. One quarter of American families with nonelderly members do not conform to the paradigm of private coverage for all members. Nearly 17% have at least one uninsured family member, and 30% to 40% of poor and near-poor families have some members with no coverage. Families with some or all uninsured members generally hold more negative views of the health care sector, which might influence their willingness to participate in publicly sponsored health insurance programs. Insured persons in families with uninsured members also have worse overall access to care than insured persons in families where everyone is covered.

The extent of health insurance coverage in the U.S. population and the relative contributions of public programs and private insurance remain central issues in American health policy. Much of our knowledge of patterns of health insurance coverage at the national level is drawn from household surveys, yet results typically have been framed in terms of individuals rather than families. We know very little about variation in insurance coverage at the family level, although the importance of family context is recognized in the study of social-behavioral aspects of health and illness,[1] and as a major determinant in access to and use of health care.[2]

Information about health insurance coverage at the family level is important for several reasons. Experience with health care may differ for families with mixed types of coverage among members, or with members who are uninsured, compared to those with the same coverage for all members. More complex insurance configurations within the family unit may influence attitudes toward the health care system as well as patterns of care seeking. In families with uninsured members, the effects may extend beyond these individuals to their families in ways that are not addressed by focusing on individuals alone. Families with an uninsured member may experience more financial burden related to health care or may have less contact with the health care sector which ultimately influences attitudes and care-seeking decisions of all family members.

The purpose of this DataWatch article is to (1) describe variation in patterns of family-level health insurance coverage by family income, structure, and ties to the workforce; (2) present views of the U.S. health care system by family-level insurance coverage; and (3) examine the role of family-level insurance coverage on perceived ability to obtain health care for insured and uninsured individuals.

Data and Methods

This analysis uses data from 1995-96, the first round of the Kaiser Survey of Family Health Experiences (K-SOFHE), a nationally representative survey of 1,401 American families (3,981 individuals) with at least one person under age 65. K-SOFHE baseline data were collected from October 1995 through January 1996 by the National Opinion Research Center (NORC) of the University of Chicago. Two key decisions in the survey design were to 1) focus on families with at least one person under age 65, thereby excluding families with only persons 65 years and older, and 2) oversample families with at least one uninsured person or one member with Medicaid.

Families consisting only of persons 65 or older were excluded because elderly people, who are universally covered by Medicare and still served predominantly by fee-for-service providers, face a different set of issues regarding coverage and access to medical care than the nonelderly. In addition, other surveys provide extensive data on the health care use, expenditures and insurance coverage of elderly people.[3] Oversampling of two types of families, those with at least one uninsured person and those with at least one person covered by Medicaid, was done to ensure approximately equal representation of the types of families of greatest interest analytically. The overall response rate was 82% (92% of resident families in valid, nonvacant housing units with English-speaking residents were screened; 89% of eligible families completed the in-person interview).

Definition of Family and Family Insurance Coverage. "Family" is defined in the K-SOFHE by social relationship and living arrangement. Two or more individuals related by blood, marriage, a 'marriage-like relationship,' or adoption and sharing a common housing unit are considered a family. Insurance coverage represents coverage at the time of interview and was obtained for each individual family member using a series of questions that addressed employment-related private insurance, individual (non-employment) private coverage, Medicaid, Medicare, and Civilian Health and Medical Program for Uniformed Services (CHAMPUS/VA) coverage. Persons for whom no coverage was reported for any of these were considered uninsured. Family patterns of coverage were developed based on the insurance status of all individual family members. In order to simplify patterns of coverage, persons under 65 with dual Medicare and Medicaid coverage were classified as Medicaid. Similarly, individuals with CHAMPUS/VA in addition to private or Medicaid coverage were classified based on the latter type of coverage. Although families consisting only of persons 65 or older were excluded from the sampling frame, families with both elderly and nonelderly people were eligible for the survey. For this analysis, however, individuals age 65 years or older were excluded when the unit of analysis was individuals.

Results

Patterns of Family Health Insurance Coverage. Nearly three-quarters of the 61.1 million American families had private health insurance coverage for every family member under the age of 65 (Exhibit 1).[4] In over 5% of families all members were covered by Medicaid, and in 4.6% of families all members were covered by a combination of private insurance, Medicaid, or other public programs. Approximately 16.6% of all families included at least one person who was uninsured, while 6.2% of American families (3.8 million) had no insured members.

As shown in Exhibit 2, private health insurance was most common in two-parent families with children and among adult-only 'married' couples (80% and 82%, respectively). Only about half of single-parent families and 40% of "other" families with children (i.e. multigenerational or non-parent adult caretakers) had private health coverage for everyone in the family. More than a quarter of one-parent families and 9% of "other" families with children had Medicaid for all members compared to 2% of two-parent families. One-parent and "other" families with children also were more likely than two-parent families to have a mix of uninsured and Medicaid covered family members.

While 5% of American families had Medicaid coverage for every member, 37% of poor families did. Medicaid does not target low-income families as a whole, rather the program's eligibility requirements lead to coverage of specific low-income individuals and family types. Consequently, another 5% of all families, and 22% of poor families, had both uninsured members and those covered by Medicaid. The likelihood of having private insurance for all members of the family directly increased with family income. For instance, only 16% of poor families had all members privately insured compared to 62% of "near poor" families (100%-199% of poverty); 80% of families with incomes ranging from 200 to 399% poverty; and 94% of families with incomes at or above 400%. In 14% of poor and "near-poor" families all members were uninsured, compared to only 1 percent of families with incomes greater than 400% of poverty.

While the link between employment and health insurance has never been guaranteed, families with two full-time workers were much more likely to have all members privately insured than families with only one full-time worker or no full-time workers. For instance, 84% of families with two or more full-time workers had all members privately insured compared to 76% of families with one full-time worker and 27% of families with no full-time workers. Although 36% of families with no full-time worker had all members covered by Medicaid, over 33% of families with no full-time worker had some or all members uninsured.

Views about Health Care. Family views about the health care sector varied considerably by patterns of insurance coverage at the family level. As shown in Exhibit 3, in families with some or all uninsured members the views expressed were generally more negative than in families with all members insured. For instance, 45% of families with some or all uninsured members said that obtaining medical care was 'more complicated' compared to one year ago while 22% of families with insured members thought that it was more complicated. Twenty percent of families with some or all members uninsured were generally 'less satisfied' with the health care compared to a year ago while only 6% of families with all members insured were less satisfied. Views about the health care sector also varied by the type coverage in families. For instance, 34% of families with all members covered by Medicaid said that obtaining care was 'more complicated' compared to one year ago while 21% of families with all members privately insured expressed this opinion. Similar patterns existed for general satisfaction with medical care, worry about obtaining medical care in the future, and delays in obtaining needed medical care for family members.

The presence of uninsured family members also appeared to influence family views of health care. For instance, 35% of families with both uninsured and privately insured members said that they worried a lot about obtaining medical care in the future compared to 19% of families with all members covered by private insurance. Similarly, 51% of uninsured/Medicaid covered families said that they worry about getting medical care in the future compared to 42% of families with everyone covered by Medicaid.

Access to Health Care. Heterogeneity in family health insurance coverage was strongly associated with perceived ability to obtain care and various measures of usual source of care for insured individuals (Exhibit 4). While the proportions of insured persons who had a usual source of care (USC) did not differ significantly between those in insured families vs. families with a mix of insured and uninsured members (91% vs. 84%, respectively), specific aspects of that usual source of care did vary considerably. For instance, 23% of insured individuals in families with uninsured family members had maintained a relationship with their USC for less than one year compared to 13% of insured persons in families with all members insured ($p<.01$). The nature of care received by insured individuals also varied by family patterns of health insurance coverage, which could affect the quality of care provided to individuals and their ability to obtain needed services. For example, smaller proportions of insured persons in families with uninsured members identified a private physician as their USC, had an on-going relationship with a particular provider at their USC, and said that they had little or no difficulty getting to their USC than insured persons in families where everyone was insured. In addition, 10% of insured individuals in families with uninsured members were 'somewhat or very dissatisfied' with their ability to obtain medical care compared to 4% of insured individuals in families where everyone had coverage. While only marginally statistically significant ($p<.10$), higher proportions of insured individuals in families with uninsured members experienced delay or impeded use of medical care and adverse health effects resulting from this compared to insured individuals in families where everyone was insured.

The experiences of uninsured individuals was worse overall than for insured persons, regardless of family patterns of insurance coverage. Differences between insured and uninsured individuals were consistent with previous research.[6] While intrafamily variation in insurance coverage did not appear to affect uninsured individuals to the same degree as the insured, a much smaller proportion of uninsured persons in families with some insured members identified a USC than uninsured persons who were in families with all members uninsured (56% vs. 73%, respectively).

Discussion and Policy Implications

Health insurance coverage at the family level presents a more complex picture than does individual insurance status, but reveals patterns of coverage that go unrecognized in analyses of individuals. The K-SOFHE shows that over one-quarter of American families do not have private, employment-based coverage for all members of the family. Over 16% or nearly 10 million families have at least one uninsured member. Complexity in health insurance coverage within families and exposure to the experiences of uninsured family members may influence both family and individual patterns of care seeking as well as attitudes toward the health care system in general. This analysis found that, compared to families with all members insured, those with some or all members uninsured were more than twice as likely to view getting medical care as 'more complicated' compared to one year ago, to be 'less satisfied' with medical care in general, worry 'a lot' about getting medical care in the future, and experience delays in getting needed medical care for family members. Compared to families with all insured members, higher proportions of families with some or all uninsured members also reported that not having enough time with medical providers and lack of information to help manage or prevent medical problems from happening or getting worse was a problem. Overall, families with some or all members uninsured had a much more negative view of the health care sector than insured families, regardless of whether coverage was public or private.

Negative views of the health care sector are particularly relevant to current outreach strategies that rely on adult family members to enroll uninsured children into publicly sponsored health insurance programs.[6] Children are dependent on parents and other adult family members to seek, consent to, and participate in health programs. Adult caretakers of uninsured children are often uninsured themselves and may have little contact with the health care system.[7] They may also harbor negative views regarding access to and quality of health care based on their own or other family members' experiences with the health care system. These views may make it more difficult to reach such adult family members and convince them of the effectiveness of public insurance initiatives.

Furthermore, policies that extend health insurance to some family members while leaving others uninsured may have the inadvertent consequence of diminishing the potential effect on access to health care of providing coverage to targeted individuals.

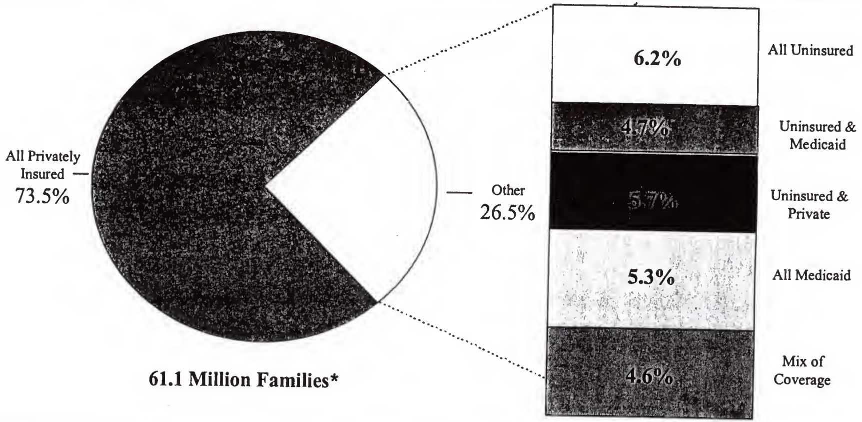
This study found that insured persons with uninsured family members had an overall worse access profile than insured persons in families where all members were insured. This has direct implications for incremental approaches to health care reform that extend health insurance to persons based on eligibility criteria such as age, disability, and/or income. For instance, as part of the Omnibus Reconciliation Acts (OBRA) of 1989 and 1990, Congress expanded Medicaid eligibility for children in poverty up through the age of 18 by the year 2002.[8] Building on the OBRA provisions, the 105th Congress enacted the State Children's Health Insurance Program or "S-CHIP" as part of the 1997 Balanced Budget Act providing. Codified as Title XXI of the Social Security Act, this legislation provides $24 billion over the next five years to insure children ineligible for Medicaid and without access to private insurance.[9] While Medicaid expansions and newly created S-CHIP could potentially provide health insurance to the majority of uninsured children, they do little to assure coverage of adult family members who are also without insurance.[10] The S-CHIP legislation, however, includes language that permits states to extend health insurance coverage to uninsured family members of newly eligible children if the state can demonstrate the "cost-effectiveness" of its approach.[11] While the operational definition of "cost-effectiveness" is yet to be clarified, not only might extending benefits to uninsured adult caretakers of uninsured children encourage greater program participation, it could promote access to care for eligible children as well. Timely use of preventive services and on-going ambulatory care would in turn reduce the incidence of many diseases, the deterioration of current health problems, and future expensive curative and remedial care.

Notes

1. For instance, see Litman T.J. (1974) "The family as the basic unit in health and medical care: A social-behavioral overview." Social Science and Medicine 8:495-519.
2. Andersen R. (1995) "Revisiting the behavioral model and access to medical care: Does it matter?" Journal of Health and Social Behavior 36:1-10; Schor, E., B. Starfield, et al. (1987). "Family health: utilization and effects of family membership." Medical Care **25**(7): 616-626; and Hanson, K. L. (1998). "Is insurance for children enough? The link between parents' and children's health care use revisited." Inquiry **35**(Fall): 294-302.
3. Laschober, M., Olin, G. Health and Health Care of the Medicare Population: Data from the 1992 Medicare Current Beneficiary Survey. Westat Inc., 1996.
4. Only a small number of families in the unweighted sample include someone 65 years or older (114 cases). Medicare coverage of these elderly family members is not reflected in Exhibit 1.
5. Sox, C. M., K. Swartz, et al. (1998). "Insurance or a regular physician: which is the most powerful predictor of health care?" American Journal of Public Health **88**(3): 364-370; Weinick, R. M., S. H. Zuvekas, et al. (1997). Access to Health Care-Sources and Barriers, 1996. Rockville, MD, Agency for Health Care Policy and Research.
6. National Governors' Association (1998). States Enact Aggressive Child Health Insurance Outreach. Washington, DC, National Governors' Association; U.S. General Accounting Office (1998). Medicaid: Demographics of Non-enrolled Children Suggest State Outreach Strategies. Washington, DC, US GAO.

7. Thorpe, K. and C. S. Florence (1998). Covering Uninsured Children and Their Parents: Estimated Costs and Number of Newly Insured. New York, The Commonwealth Fund: 17. This analysis of the 1997 Current Population Survey (CPS) found that approximately 80 percent or 6.8 million parents of uninsured children were also uninsured in 1996. This finding suggests that lack of health insurance is a shared family problem.
8. Dubay, L. and G. Kenney (1997). Lessons from the Medicaid Expansions for Children and Pregnant Women: Implications for Current Policy. Washington, D.C., The Urban Institute.
9. Rosenbaum, S., K. Johnson, et al. (1998). "The children's hour: the State Children's Health Insurance Program." Health Affairs **17**(1): 75-89.
10. Thorpe, K. E. (1997). "Incremental approaches to covering uninsured children: design and policy issues." Health Affairs **16**(4): 64-78.
11. Balanced Budget Act of 1997 (H.R. 2015). Title XXI of the Social Security Act.

Figure 8
Health Insurance Coverage in American Families - 1995



SOURCE: Kaiser Survey of Family Health Experiences (K-SOFHE), 1995-96.

NOTES: 2 or more person families with at least one member who is <65 years old.

TABLE 24:
FAMILY TYPE, INCOME, AND WORK STATUS BY PATTERNS OF FAMILY HEALTH COVERAGE

			Patterns of Family Health Coverage					
			All Members Insured			Some or All Members Uninsured		
			All Private	All Medicaid	Mix of Coverage[1]	All Uninsured	Uninsured & Private	Uninsured & Medicaid
All Families (millions)		61.1M	44.9M	3.2M	2.8M	3.8M	3.5M	2.9M
		Number	Percent Distribution					
Families with Children	2 Parent	25.2M	80%	2%	3%	7%	4%	4%
	1 Parent	8.4M	52%[a]	26%[a]	3%	4%	5%	9%[a]
	Other[2]	2.7M	36%[a]	9%[a]	20%[a]	7%	10%	19%[a]
Adult Only Families	Couple	15.3M	82%	1%	6%	6%	4%	1%
	Other[3]	9.5M	72%[b]	2%	3%	7%	13%[b]	3%[b]
Family Income[4] (% of Poverty Level)	<100%	6.9M	16%[c]	37%[c]	4%	14%[c]	6%[c]	22%[c]
	100<200%	12.1M	62%[c]	4%[c]	4%	14%[c]	8%[c]	8%[c]
	200<399%	22.0M	80%[c]	1%	7%	4%[c]	7%[c]	1%[c]
	≥400%	18.9M	94%	0%	3%	1%	3%	0%
Employment Status of Working-aged Adults in Families[5]	0 FT Workers	7.3M	27%[d]	36%[d]	5%	14%[d]	3%[d]	16%[d]
	1 FT Worker	26.5M	76%[d]	2%[d]	6%	6%[d]	5%[d]	5%[d]
	≥2 FT Worker	26.9M	84%	0%	4%	4%	7%	1%

SOURCE: Kaiser Survey of Family Health Experiences (K-SOFHE), 1995-96

NOTES: M = million. FT = full time. Significant Differences (p<.05)

[a] Compared to 2-parent families. [b] Compared to married couples. [c] Compared to families with incomes of ≥400% poverty.

[d] Compared to families with ≥2 FT workers

[1] In approximately half of these families there is both Private and Medicaid, in the remainder there is private coverage with Medicare (under age 65) and/or CHAMPUS.

[2] Families consisting of adults other than parents with children, e.g. non-elderly grandparent(s) with grandchild(ren).

[3] For example, adult siblings living together or non-elderly parent and adult child

[4] Currently excludes 2% of the total sample of families with unknown incomes

[5] Age 16 or older and working 35+ hours per week.

TABLE 25

Views About Health Care by Patterns of Family Health Coverage[1]

		Patterns of Family Health Insurance Coverage							
		All Members Insured				Some or All Members Uninsured			
		All Members Insured	All Private	All Medicaid	Mix of Coverage[2]	Some/All Members Uninsured	All Uninsured	Uninsured & Private	Uninsured & Medicaid
		%	%	%	%	%	%	%	%
Getting Medical Care Compared to 1 Year Ago**	More Complicated	22	21	34	24	45	47	41	47
	Less Complicated	8	8	9	5	2	4	3	0
	About the Same	70	71	56	71	52	49	56	53
General Satisfaction with Care Compared to 1 Year Ago**	More Satisfied	16	16	15	18	6	4	6	8
	Less Satisfied	7	6	18	14	20	25	13	21
	About the Same	77	79	67	68	74	71	71	71
Worry about Getting Medical Care in the Future**	A Lot	21	19	42	29	48	57	35	51
	Some	27	26	24	32	25	22	33	21
	A Little	20	20	16	12	14	12	15	16
	Not at All	33	34	18	27	13	10	17	12
Problems Communicating with Providers	Yes	13	13	15	12	16	20	10	18
	No	87	87	85	88	84	80	90	82
Not Enough Time with Providers Is A Problem*	Yes	15	15	16	21	20	26	14	21
	No	85	85	84	79	80	74	86	79
Delays in Getting Needed Med. Care for Family**	Yes	10	9	21	22	22	27	12	29
	No	90	91	79	78	78	73	88	71
Lack of Information to Help Prevent Problems**	Yes	12	11	14	23	17	20	14	16
	No	88	89	86	77	83	80	86	84

SOURCE: Kaiser Survey of Family Health Experiences (K-SOFHE), 1995-96

NOTES: Statistical comparison of All Family Members Insured with Some or All Family Members Uninsured. Statistical Significance Level: ** P≤ .01 * P≤ .05

[1] The views represented are those of the household respondent who was selected as most knowledgeable about the family's health care.

[2] In approximately half of these families there is both Private and Medicaid, in the remainder there is private coverage with Medicare (under age 65) and/or CHAMPUS

TABLE 26
ACCESS PROFILE FOR INSURED AND UNINSURED INDIVIDUALS BY FAMILY-LEVEL COVERAGE

		Insured Persons		Uninsured Persons	
		Family Insurance Coverage		Family Insurance Coverage	
		All Insured (%)	Mix of Insured/Unins. (%)	All Uninsured (%)	Mix of Insured/Unins. (%)
Usual Source of Care (USC)	Yes	91	84	73	56***
	No	9	16	27	44
Duration of USC	< 1 Year	13	23***	18	19
	1 ≤ 5 Years	48	51	46	49
	> 5 Years	40	26	36	32
Type of USC	Private MD	65	54**	45	44
	HMO	11	8	1	2
	Clinic or Health Center	21	29	46	40
	Emergency Department	0	3	4	9
	Hosp. Outpatient Dept.	2	5	3	4
	Other	1	1	1	2
Regular Provider at USC	One Provider	82	73**	68	71
	Different Providers	18	27	32	29
Difficulty getting appointment on short notice at USC	Not Difficult	81	72*	72	73
	Somewhat Difficult	16	21	17	18
	Very Difficult	2	6	9	8
	Not Possible	1	1	2	1
Difficulty getting to USC	Very/Fairly Difficult	4	7**	9	10
	A Little Difficult	10	14	11	17
	Not at All Difficult	86	78	80	72
Difficulty with Medical Care	Yes	6	9*	22	22
	No	94	91	78	78
Adverse health due to barrier	Adverse Effect	5	8*	16	20
	No Adverse Effect	95	92	84	80
Satisfaction with ability to obtain care	Very Satisfied	66	51***	19	23
	Generally Satisfied	30	39	33	37
	Somewhat/Very Dissatisfied	4	10	48	40

SOURCE: Kaiser Survey of Family Health Experiences (K-SOFHE), 1995-96
NOTE: Statistical comparisons within insured and uninsured individuals conducted separately.
Statistical Significance Level: *** P≤ .01 ** P≤ .05 * P≤.10
Unins.=Uninsured
Hosp.=Hospital

Chapter 6

(Manuscript 2)

Ability to Obtain Health Care for Children – Does Mother's Insurance Coverage Matter?

Abstract

Objectives: This study examined the association of maternal health insurance coverage with ability to obtain health care for children independent of child insurance coverage.

Methods: Cross-sectional analyses used baseline data from the Kaiser Survey of Family Health Experiences (K-SOFHE). Ability to obtain health care was compared for insured children before and after mothers lost health insurance as well as for a comparison group of insured children whose mothers kept insurance for all three years of the study period.

Results: Controlling for poverty status, family structure, race/ethnicity, child gender and maternal age, insured children with uninsured mothers were 3.38 times as likely, and insured children with mothers in Medicaid were 2.68 times as likely as insured children with privately insured mothers to have difficulty obtaining care in 1995-96. The proportion of consistently insured children who experienced difficulty obtaining care increased by 6.5% after their mothers lost health insurance of any type ($p<.05$), while this proportion actually decreased over time by 1.2% for comparison group children ($p<.05$).

Conclusions: Findings suggest that state initiatives to improve access to care for children might be more effective if their uninsured parents are included as well.

A large and growing body of evidence has shown that health insurance coverage is a strong predictor of timely use of health care services for both children[33-38, 96] and adults.[19, 21, 39, 41-44, 91] Given the important role of health insurance in promoting timely use of health care for individuals, current trends in coverage are worrisome from a public health perspective.[208] According to the Employee Benefit Research Institute, the percentage of non-elderly Americans with employment-based coverage generally has fallen over the past decade for both workers and their dependents.[45, 48] Dependent's coverage, however, has declined at a much faster rate, and children have been particularly vulnerable since they are typically covered under their parents' insurance plan.[209]

The public policy response to these trends in private insurance coverage has been to extend publicly sponsored health insurance to targeted groups of children since they cost less to insure on average and are considered more "deserving" of public support than adults.[49, 50] For instance, as part of the Omnibus Reconciliation Acts (OBRA) of 1989 and 1990, Congress successfully passed legislation that expanded Medicaid eligibility for children in poverty up through the age of 18 by the year 2002.[1, 2] Building on the OBRA provisions with bipartisan support, the 105th Congress enacted the State Children's Health Insurance Program or "S-CHIP" as part of the 1997 Balanced Budget Act. Codified as Title XXI of the Social Security Act, S-CHIP legislation provides over $4 billion per year in new federal funds (more than $40 billion over the next decade) to insure children ineligible for Medicaid and without access to private insurance.[3-5]

Public policy and the changing health insurance marketplace, however, have left many families only partially covered – some members insured while others uninsured.

Although Medicaid expansions and S-CHIP could potentially provide health insurance to nearly two-thirds of the 11.3 million currently uninsured children over the coming years,[210] they have done little to help cover non-pregnant, uninsured adult family members. A recent analysis of the 1997 Current Population Survey (CPS) found that approximately 80 percent or 6.8 million parents of uninsured children were also uninsured in 1996 suggesting that lack of health insurance is a shared family problem.[6]

Historically, women (particularly mothers) have been the principal brokers of health services for their children.[29] They not only define their children's illnesses and health needs, but they also decide if, how, when, and where to seek care for those needs.[22] Prior research has consistently demonstrated that maternal use of health care services is a strong predictor of children's use,[22-25, 32] but no studies have directly addressed the role of maternal health insurance in predicting ability to obtain needed health services for children independent of the child's own health coverage.

Uninsured mothers potentially have little contact with the health care system due to financial barriers. They may also harbor negative views regarding access to and quality of health care based on their own experiences, which may affect their ability or willingness to obtain health care for children.[211] Since children are dependent on mothers to enroll them into public insurance programs, such as new S-CHIP initiatives, and arrange their health care, extending health insurance to uninsured adult family members might not only encourage greater program participation for the entire family, but also promote access to care for targeted children. Further, timely use of preventive and on-going ambulatory care would in turn prevent deterioration of health problems and expensive curative care in the future for both children and adults.[79, 83, 85, 91-94]

The main purpose of this study is to determine if maternal health insurance coverage predicts perceived ability to obtain care for children independent of the child's own insurance coverage. The findings of this research are directly relevant to states that are considering the expansion of publicly funded insurance to adult family members of S-CHIP and Medicaid eligible children. Perhaps greater focus on 'family' coverage would be more effective in achieving the explicit goal of insuring eligible children and improving their ability to obtain timely health care.

Data and Methods

Data Source

This study used data from the first three waves of the longitudinal Kaiser Survey of Family Health Experiences (K-SOFHE) conducted from October 1995 through January 1998. Two key decisions in the survey design were to 1) focus on households with at least one person under the age of 65, and 2) oversample families with uninsured family members or members with Medicaid coverage.[212] The K-SOFHE was funded by the Henry J. Kaiser Family Foundation and was principally designed by Judith Kasper at the Johns Hopkins University School of Hygiene and Public Health.

The sampling unit was the family, where a family was defined as related individuals living together, unrelated individuals living together in a marriage-like relationship, or a single person household. Families were selected by sampling housing units from the National Opinion Research Center's (NORC) national area probability frame using a stratified, multistage procedure to ensure an accurate representation of the greater U.S. population.[212] Both the screening interview and baseline interview were conducted in person by an interviewer to encourage continued participation in subsequent rounds. A knowledgeable adult served as respondent for all family members, as is done in most national household surveys. The interviewer recorded detailed contact information for second and third waves of interviewing, which typically were conducted by telephone. Overall, 82 percent of resident families in valid, non-vacant housing units with English speaking residents were successfully interviewed at baseline resulting in a cohort of 1,401 families (3,949 individuals).

Study Sample

For the purposes of this study, a "child" was defined as anyone less than 18 years of age who was not married, living with a partner, or living alone. Rounds 1, 2, and 3 together consisted of 1,522 children. As shown in Table 1, 1331 children participated in Round 1, 1,070 in Round 2 (73% of baseline), and 1,119 in Round 3 (72% of baseline). Ninety-eight children new to Round 2 either were born after interviewing in Round 1 or moved into families that were already part of the K-SOFHE sample since there was no supplementing the sample with new families after the baseline interview. "Out of scope" children included those who were 17 years old in Round 1 and were excluded in Round 2 because they had turned 18 years old. "In scope loss" included children who were under the age of 17 years old in Round 1 and were eligible for inclusion in the study during Round 2 but were not present. Of those eligible for Round 2, 309 children did not participate.

Identification of the Child's Primary Adult Caretaker

The "caretaker" role for a child is primarily based on familial and social relationships between adults and their children. This study regarded the child's primary caretaker as the person who would be most likely to make decisions regarding the child's need for health care. Presumably, the primary caretaker would decide when the child needed to be seen by a health care provider and would be responsible for arranging the child's health care. Caretaker selection was based on four principal assumptions:

1. Females are more likely to be the primary caretakers of children than males;
2. Mothers are more likely to be primary caretakers of children than other adult females in the family unless the child's mother is a minor (less than 18 years old) and lives with her own mother. In this case, the young child's grandmother was considered to be the primary caretaker;
3. Grandmothers are more likely to be primary caretakers of children in the absence of the child's mother than other adult females in the home such as the child's aunts, cousins, or adult siblings; and
4. Fathers are more likely to be the primary caretaker of children than other adult male relatives of the child if living together.

Based on these assumptions, 707 child caretakers were identified at baseline. While mothers or stepmothers constituted the great majority of child caretakers (89.3%), 43 fathers (6%) and 33 grandmothers, aunts, and adult sisters (5%) were also identified as primary caretakers of children. Caretaker relationships with children were reassessed each round. For convenience, the identified primary caretaker is designated as 'mother.'

Measurement

"Access" was defined in this study in terms of perceived ability to obtain timely health care services for children and was represented by a number of indicators found in the literature to be correlated with timely use of services. For instance, the family's reference person was asked if in the preceding year each child "needed but did not get care, or had difficulty getting care" of any of the following types: general physician, emergency medical, a specialty doctor, home health care, rehabilitation services, mental health services, or medications. This measure has been used extensively in prior research including large-scale national surveys in order to capture the perceived ability of individuals to obtain timely health services.[19, 38, 147, 148, 200-202] Respondents were also asked to rate their overall satisfaction with the family's ability to obtain health care for each child and was measured on a Likert scale with response options including very satisfied, generally satisfied, somewhat dissatisfied, and very dissatisfied.

The presence, duration, and type of a usual source of care has been found in the literature to be highly correlated with timely use of health services.[41, 68, 69, 72, 213] For instance, Lambrew et al found that persons with a usual source of care were more likely to have a physician visit and less likely to use the emergency room for ambulatory care than persons without a usual source of care.[68] Persons who also identified a regular doctor were more likely to have at least one physician visit than those who reported a regular site of care but no regular doctor.[68] Certain types of health care organizations were more likely to organize their care around physicians. For instance, people who reported physician offices or private clinics as their usual source of care were more likely to have a regular physician than those who reported hospital outpatient departments, public clinics, or other places.[30, 68] In the present study, usual source of care was assessed in five ways: (1) whether or not the individual had a provider or facility where they sought most of their health care, (2) duration of the relationship with the usual provider or facility, (3) type of usual source that the individual used, (4) whether or not the usual source of care was a specific provider rather than a specific place, and (5) ease of obtaining an appointment on short notice. The terminology of these items is similar or identical to other large, nationally representative surveys of the American population.[56, 73, 147]

Insurance coverage represented coverage at the time of interview and was obtained for each individual family member using a series of questions that addressed employment-related private insurance, individual (non-employment) private coverage, Medicaid, Medicare, and Civilian Health and Medical Program for Uniformed Services (CHAMPUS/VA) coverage. Persons for whom no coverage was reported for any of these were considered uninsured.

Since many financial and non-financial factors affect a mother's ability to obtain care for her children, a number of control variables were included in this study. Family-level control variables included family structure, poverty status, and number of children. Parent-level variables included age, gender, health status, education, race/ethnicity, and employment status. Child-level variables included insurance status, age, gender, health status and race/ethnicity.

Analysis

Bivariate analyses first involved the categorization of child-mother dyads with respect to insurance status. Chi square tests were used to compare children by maternal insurance status on sociodemographic and access indicators for Rounds 1, 2, and 3. Cross-sectional analyses of baseline data are presented here, but findings were consistent for each round of data. The K-SOFHE employed a multistage probability sampling design very similar to the National Health Interview Survey, which involved stratification, clustering, and over-sampling techniques.[198] Unless noted, standardized weights were used in all analyses to account for over sampling. In bivariate analyses, the design effect resulting from the clusters in sample selection was estimated and variance inflated by the first-order Taylor series approximation using the Research Triangle Institute's Professional Software for Survey Data Analysis (SUDAAN).[203] In the analyses of variance it was assumed that intra-family correlation was constant at the secondary sampling level within the primary sampling unit. Adjusting the variance and standard errors affected the overall findings only on marginally significant associations. Estimates of the effect remained constant after correcting for sampling error.

Multivariate logistic regressions were used to model the likelihood of experiencing difficulty in obtaining care for children and control for potential confounding. Separate analyses for insured and uninsured children controlled for the effect of child insurance coverage. Correlation matrices were used to identify highly associated variables to avoid colinearity of variables within multivariate models. If two variables were highly correlated, their inclusion in the multivariate models was based on hypothesized relationships between the independent variable, maternal health insurance coverage, and the dependent variable, difficulty in obtaining care for children. For instance, child and mother race/ethnicity were highly correlated. Only mother race/ethnicity was included in the multivariate model, however. It was hypothesized that the effect of race or ethnicity on ability to obtain care for children is more a function of the mother's experience with the health care system than the child's.

The "GLIMMIX" macro for fitting generalized linear mixed models using "PROC MIXED" and the Output Delivery System (ODS) allowed for multivariate analyses using logistic regressions in SAS.[205] PROC MIXED provided a variety of covariance structures to address the correlation of clusters used in the K-SOFHE's complex sampling design.[206, 207] Since normally distributed data can be modeled entirely in terms of their means and variances/co-variances, the fixed- and random-effects parameters in the mixed linear model specified the complete probability distribution in the data.[206]

This study assessed the impact of maternal insurance loss on the difficulty in obtaining care for children by considering maternal insurance status at pairs of consecutive rounds. A pair of observations was included in the analysis whenever (1) the child was insured at the earlier interview and the subsequent interview, (2) the child's mother was either privately or publicly insured at the earlier interview, and (3) data were collected on the mother's insurance status at the later interview. Since the K-SOFHE included three interview periods, insured children with insured mothers at the first of each pair of data points contributed two observations to the analysis (Round 1 to Round 2 and Round 2 to Round 3). Children were categorized into two groups: (1) mother lost insurance and (2) mother did not lose insurance. The proportion of each group that experienced difficulty in obtaining care was compared at the earlier and later rounds using chi square tests of two independent samples. Change in ability to obtain care was assessed for each group between two time periods using the McNemar test for pre and postest data.[214]

Results

As shown in Table 2, health insurance coverage of children and their mothers was highly correlated. For instance, nearly all children (98.9%) in 1995-96 with private health insurance had mothers who were also privately insured. Among children with Medicaid, approximately 71 percent had mothers who were also covered by Medicaid, six percent had mothers with private insurance, and 23 percent had mothers with no coverage at all. Among uninsured children, over 83 percent had mothers who were uninsured, 11.6 had privately insured mothers, and 4.7 percent had mothers insured through Medicaid.

Due to welfare reform legislation passed in 1996 and the bifurcation of Medicaid and cash assistance program eligibility, states now have the option to extend Medicaid coverage to uninsured parents of Medicaid eligible children.[9] The K-SOFHE did not determine Medicaid eligibility for children since criteria vary by state. Nevertheless, the survey did allow for comparing children already in Medicaid by maternal insurance status. As shown in Table 3, uninsured mothers tended to be younger than mothers with Medicaid. For instance, approximately one-third of Medicaid sponsored children had uninsured mothers under the age of 25 compared to about one-fifth of Medicaid-sponsored children with mothers insured by Medicaid. Nearly 48 percent of children with uninsured mothers were in two-parent families compared to less one quarter (24.4%) of children with mothers covered by Medicaid.

While only marginally significant (p<.08), children with mothers in Medicaid tended to be poorer than children with uninsured mothers. For instance, 79.2 percent of children with mothers in Medicaid were below the federal poverty line compared to approximately two-thirds (66.5%) of children with uninsured mothers. Medicaid sponsored mothers were about half as likely to be in the labor force than uninsured mothers (23.9% vs. 47.1%, respectively), and when mothers in Medicaid did work, they were about half as likely to work full time (31.0% vs. 58.1%, respectively).

Table 4 compares insured children by their mother's insurance coverage on access indicators. Just over three percent of insured children with privately insured mothers were unable or had difficulty obtaining health care when needed, compared to 7.6 percent of insured children with Medicaid sponsored mothers and 12.2 percent of insured children with uninsured mothers. Just over one percent (1.1%) of children with privately insured mothers were "very dissatisfied" with access to care, compared to 2.1 percent of children with Medicaid insured mothers, and 9.4 percent of children with uninsured mothers.

Although there was no statistically significant difference in the proportion of insured children who had a usual source of care by their mother's insurance status, the nature of that usual source of care did vary considerably. For instance, only 14 percent of children with privately insured mothers had had their usual source of care for less than one year compared to more than 27 percent of children with Medicaid insured mothers and 35 percent of children with uninsured mothers.

Specific aspects of the usual source of care did not always differ significantly or was not necessarily better for children with mothers covered by Medicaid compared to children whose mothers had no insurance coverage at all. For instance, two-thirds (66.0%) of children with privately insured mothers had a private physician or private clinic as their usual source of care. However, only about one-third (34.9%) of children with Medicaid insured mothers and one-half (51.6%) of children with uninsured mothers had a private physician or clinic as their usual source of care. While 82.6 percent of children with privately insured mothers had a specific physician at their usual source of care, 71.7 percent of children with Medicaid sponsored mothers and 69.4 percent of children with uninsured mothers had a specific physician as their usual provider of care. Similarly, it was 'somewhat difficult' to 'impossible' to obtain an appointment at the child's usual source of care for 13.5 percent of children with privately insured mothers, 32.1 percent of children with Medicaid insured mothers, and 29.5% of children with uninsured mothers.

Table 5 presents the adjusted odds ratios of experiencing difficulty in obtaining care for insured children using Round 1 data. Controlling for family poverty status, child gender, age of mother, family structure, and maternal race/ethnicity, insured children with mothers in Medicaid were 2.68 times as likely to have difficulty obtaining care than insured children with privately insured mothers. Insured children with uninsured mothers were 3.38 times as likely to experience difficulty in obtaining care than insured children with privately insured mothers. Controlling for other factors in the model such as maternal insurance coverage and family poverty status, insured children in single parent families were over twice as likely (OR=2.10, 95% CI=1.21,3.62) to encounter difficulty in obtaining needed health care than insured children in two-parent families.

Table 6 presents the pre-post test results for consistently insured children whose mothers had lost health insurance coverage during the three-year K-SOFHE study period. Proportions presented are unweighted since tests of paired data such as the McNemar Test are not available in SUDAAN and relative population weights were adjusted each year. Prior to the mother losing health insurance, 8.2 percent of insured children whose mothers lost insurance experienced difficulty in obtaining needed health care compared to 3.9 percent of those whose mothers kept insurance, but these differences were only marginally significant ($p<.07$). After the mother lost health insurance, the proportion of their children who had difficulty in obtaining needed health care rose to 14.7 percent, an increase of 6.5 percent ($p<.03$). The proportion of children with mother losing insurance, however, who experienced difficulty in obtaining care actually declined from 3.9 percent to 2.7 percent at the subsequent interview, a statistically significant change of –1.2 percent ($p<.04$). At this later time, the difference in difficulty obtaining care between children whose mothers lost insurance and those who did not had grown to 12.0 percent and was statistically significant ($p<.001$).

Discussion

Child and family advocates have argued without much empirical evidence that extending health insurance coverage to adult members of S-CHIP and Medicaid eligible children would not only improve access to care for adults but for their children as well.[7] The present study provides evidence that insured children with publicly or privately insured mothers are less likely to experience difficulty in obtaining health care than insured children with uninsured mothers.

The most striking differences were found between insured children with privately insured mothers and insured children with uninsured mothers. For instance, less than four percent of insured children with privately insured mothers experienced difficulty in obtaining care during 1995-96 compared to more than 12 percent of insured children with uninsured mothers during that same time period. Children with uninsured mothers were also more likely to encounter difficulty in obtaining care after controlling for family poverty status, family structure, child gender, maternal age, and maternal race/ethnicity. While the proportion of insured children with a usual source of care did not vary considerably by maternal insurance coverage, the nature of that usual source did. For instance, the proportion of insured children with an uninsured mother who had a long standing relationship with their usual source of care was much lower than the proportion of insured children with insured mothers, even for children with mothers covered by Medicaid.

Assessing change in maternal insurance coverage among consistently insured children revealed similar findings regarding ability to obtain care for children over time. For instance, the proportion of children who experienced difficulty in obtaining care increased considerably for families where the child's mother lost health insurance. The proportion of children who experienced difficulty in obtaining care actually decreased, however, for families where the child's mother remained insured.

This finding suggests that healthcare-related experiences of mothers are associated with the perceived ability to obtain health care for children. Therefore, programs designed to improve access to care for children might be more effective if their parents are targeted as well. One could speculate that since uninsured adult mothers are less likely to have any usual source of care for themselves or are less likely to frequent types of health care organizations that facilitate on-going relationships with specific providers,[41, 68] they are less experienced or 'savvy' in negotiating care. Or, perhaps, uninsured mothers seek care for their children at the same types of providers as they do for themselves regardless of the child's insurance coverage. More work is needed to understand why uninsured mothers have more difficulty obtaining needed care for children irrespective of the child's health insurance status.

The use of all three rounds of data in the pre-post test was designed to assess the family's ability to obtain needed care for continually insured children before and after the mother lost health insurance. While the comparison group of continually insured children whose mothers remained insured during the study period helped to control for confounding affects, these two groups were not identical. For instance, the proportion of children covered by Medicaid was greater in the group whose mothers lost insurance than in the comparison group, and they were more likely to have difficulty obtaining care for their children. Medicaid and privately insured children were combined in this analysis because the proportion of insured children whose mothers lost health insurance would have been very small for separate subgroups and would have produced unstable estimates. Nevertheless, it is not clear that either group would have been more likely to experience difficulty in obtaining care for children over time if it were not for the loss of maternal health insurance coverage.

Weinick and Monheit have recently shown that family structure is highly predictive of child insurance coverage.[95] However, controlling for child insurance, maternal insurance, poverty status, and other sociodemographic characteristics, children in one-parent families were still more likely to experience difficulty in obtaining care than children in two-parent families. It is possible that single parents have less social support and face greater time costs in seeking health care for their children, but more work is clearly needed to elucidate the role of family structure and ability to obtain care for children.

Even though the K-SOFHE had a relatively high response rate, families who did not participate in all three rounds were different than those who did. Analysis of families lost to follow-up revealed that missing individuals were more likely to have Medicaid or be uninsured, experience difficulty in obtaining care, and lack a usual source of care at baseline than individuals who remained in the sample for all three rounds. These inherent differences in the group lost to follow-up would have only affected the pre-post test analysis of maternal health insurance loss, which included all three years of data. Inclusion of missing individuals would have increased estimates of children who experienced difficulty in obtaining care at any given time, but it is not clear how they would have influenced the impact of maternal health insurance loss over time. It seems reasonable to assume that their exclusion underestimated the extent of actual differences across the different groups of children.

In addition, the K-SOFHE was intended to provide a nationally representative sample. Certain subgroups, however, such as non-English speakers, migrant workers, and homeless were not represented in the study data set. Therefore, results should be interpreted with caution and not extrapolated to non-represented families.

Despite these and other limitations, this study provides timely data that are directly relevant to state health insurance initiatives targeting adult family members of S-CHIP and Medicaid eligible children.[7] In this study, approximately 23 percent of children covered by Medicaid had at least one parent, their primary caretaker, who was uninsured. Uninsured mothers were more likely to be married or live with a partner, have slightly higher family income, and be employed full-time than mothers already insured by Medicaid. Since S-CHIP legislation permits states to cover uninsured adult family members at the higher federal matching rate than traditional Medicaid only under certain limited circumstances,[215] recent changes to the welfare laws make the Medicaid program a more viable option to cover uninsured parents. Under section 1931(b) of the Personal Responsibility and Work Opportunity Reconciliation Act of 1996 (P.L. 104-193), states have the option to raise the Medicaid income and resource standards, use less restrictive methodologies for calculating income and resources, amend family composition rules to cover more two-parent families, and continue AFDC waivers for income, resource, and family composition Medicaid eligibility criteria.[9] A combination of approaches may also be used for states to extend health insurance to uninsured parents of Medicaid and S-CHIP eligible children. For instance, Missouri and Rhode Island have proposed to cover parents under Medicaid at the regular matching rate and children under the enhanced matching rate for S-CHIP.[7]

Given the relatively higher rate of employment status among uninsured parents of Medicaid sponsored children compared to parents insured through Medicaid, public subsidy of private insurance may also be a potentially effective option. The Health Care Financing Administration has recently approved Massachusetts' plan to use S-CHIP funds to subsidize premium costs for employer-sponsored insurance for families between 151 and 200 percent of poverty.[7] Other states such as California have considered adding "purchasing credits" to their S-CHIP proposals that would help families purchase private insurance.[7] This study found that controlling for poverty status, family structure, and other sociodemographic characteristics of the family, insured children with privately insured mothers were much less likely to experience difficulty in obtaining care for their health-related needs than insured children with mothers in Medicaid. The benefit of subsidizing employment-based insurance, however, would only reach those families with access to private, employment-based insurance coverage. Findings from this study suggest that state initiatives that explore pooling newly insured families into private insurance purchasing cooperatives might result in better access to care for working and non-working members of the family than simply expanding the existing Medicaid program.

While insured children with privately insured mothers had better overall access to care than insured children with mothers in Medicaid, Medicaid was better than no insurance coverage at all. States now have a unique opportunity to use federal matching funds and move toward universal coverage by extending health insurance to low-income, uninsured parents of S-CHIP and Medicaid eligible children. Providing health insurance to adult family members might not only improve their own ability to obtain timely care and avoid unnecessary illness and cost, but improve the timely receipt of care for their children as well.

Table 27

Panel Attrition and Participation for Children, K-SOFHE 1995-98

	Round 1	Round 2	Round 3
Total Number of Children	1331	1070	1119
No. from R1	-	972	956
% of R1	-	73.0	71.8
No of R2	-	-	907
% of R2	-	-	84.8
New to Round	-	98	93
Out of Scope	-	50*	73**
In scope loss from R1	-	309	306
In scope loss from R2	-	-	118

Source: K-SOFHE Rounds 1-3

* 17 years old in Round 1

** 16 years old in Round 1 or 17 years old in Round 2 and not in Round 1

Table 28

Health Insurance Coverage of Children by Maternal Insurance Coverage at Round 1, 1995-96.

Child's Health Insurance Type	n	**Maternal Health Insurance Type** Medicaid %	 Private %	 Uninsured %	Total % of Child Population
Medicaid	581	70.9 (3.8)	6.01 (1.6)	23.0 (4.1)	19.9 (2.2)
Private	462	0.1 (0.0)	98.9 (0.2)	1.0 (0.2)	73.4 (2.7)
Uninsured	255	4.7 (1.9)	11.6 (3.3)	83.6 (3.4)	8.7 (1.0)

SOURCE: K-SOFHE, 1995-96

NOTE: Parentheses contain standard errors. All percentages are weighted. "Other" types of health insurance were excluded from this analysis.

Table 29
Maternal Insurance Coverage for Children in Medicaid by Sociodemographic Characteristics at Round 1, 1995-96

	Mother in Medicaid n=408 % (1)	Mother Uninsured n=138 % (2)
Child Age*		
0 < 5 years	39.6 (2.3)	52.1 (5.4)
5 < 12 years	40.1 (2.2)	41.9 (5.1)
12 < 18 years	20.3 (2.4)	6.0 (2.3)
Child Health Status		
excellent	36.6 (3.6)	38.9 (7.2)
very good	36.9 (4.8)	29.1 (6.7)
good	21.3 (3.0)	21.5 (5.5)
fair/poor	5.3 (1.2)	10.5 (4.6)
Family Structure*		
2 parents	24.4 (3.8)	46.7 (6.2)
1 parent	56.8 (4.0)	31.5 (6.3)
other[a]	18.9 (3.7)	21.8 (5.4)
Family Poverty Status**		
≤ 100%	79.2 (2.7)	66.5 (7.0)
101 ≤ 200%	19.5 (2.5)	26.0 (6.4)
201 ≤ 400%	1.3 (0.6)	7.5 (3.0)
> 400%	-	-
Number of Children		
1 child	20.3 (2.4)	15.6 (3.9)
2 children	32.5 (3.4)	44.9 (6.0)
≥ 3 children	47.2 (4.4)	39.5 (6.4)
Age of Caretaker*		
17 < 25 years	20.3 (2.8)	33.4 (5.1)
25 < 35 years	47.7 (4.8)	43.6 (5.9)
35 < 50 years	27.4 (3.3)	23.0 (4.9)
≥ 50 years	4.6 (1.4)	-
Caretaker Race/Ethnicity		
white, non-Hispanic[b]	41.8 (5.1)	45.8 (7.8)
black, non-Hispanic	41.3 (6.6)	29.4 (7.3)
Hispanic	16.9 (4.6)	24.9 (5.9)
Caretaker Employment Status*		
in labor force[c]	23.9 (3.2)	47.1 (6.9)
not in labor force	76.1 (3.3)	52.9 (6.9)
FT/PT Employment Status of Caretaker*		
full time[d]	31.0 (7.0)	58.1 (8.9)
part time	69.0 (7.0)	41.9 (8.9)

SOURCE: K-SOFHE, 1995-96

NOTE: All percentages are weighted; PT = Part time; FT = Full time; * Column 1 is statistically different from column 2 at $p < .05$; ** Columns 1 and 2 are statistically different at $p<.10$; [a] Families consisting of adults other than parents with children, e.g. grandparent(s) with grandchild(ren); [b] "Other" ethnicity included with white, non-Hispanic; [c] Works at a "job" or in a business for pay; [d] ≥ 35 hours per week.

Table 30
Maternal Insurance Type for Insured Children by Child Access Indicators at Round 1, 1995-96

Child Access Profile	Maternal Insurance Type		
	Private **n=477** **% (1)**	**Medicaid** **n=409** **% (2)**	**Uninsured** **n=171** **% (3)**
Barrier to Health Care for Child [a,c]			
yes	3.4 (0.8)	7.6 (1.3)	12.2 (4.2)
no	96.6 (0.8)	92.4 (1.3)	87.8 (4.2)
Mother's Satisfaction with Access to Care for Child [(a:p≤.07), c]			
very satisfied	67.5 (3.9)	56.7 (5.2)	36.2 (5.7)
generally satisfied	29.7 (3.9)	34.9 (4.6)	44.9 (5.6)
somewhat dissatisfied	1.7 (0.8)	6.3 (2.0)	9.5 (4.1)
very dissatisfied	1.1 (0.4)	2.1 (1.1)	9.4 (3.1)
Child Usual Source of Care (USC)			
yes	95.3 (1.2)	93.5 (2.4)	91.9 (3.9)
no	4.7 (1.2)	6.5 (2.4)	8.2 (3.9)
Duration of Child's USC [a,b,c]			
< 1 year	14.0 (2.4)	27.5 (3.6)	35.4 (5.4)
1 to 5 years	50.3 (3.2)	49.1 (4.1)	55.2 (5.4)
> 5 years	35.7 (3.4)	23.4 (4.5)	9.4 (2.7)
Solo MD/Private Group Practice is Child's USC [a,b,c]			
yes	66.0 (4.2)	34.9 (4.6)	51.6 (6.6)
no	34.0 (4.2)	65.1 (4.6)	48.4 (6.6)
Specific Provider at Child's USC [(a:p≤.07), c]			
yes	82.6 (3.0)	71.7 (5.0)	69.4 (6.0)
no	17.4 (3.0)	28.3 (5.0)	30.6 (6.0)
Difficulty Obtaining Appointment at Child USC [a,c]			
not at all difficult	86.5 (2.9)	67.9 (4.5)	70.5 (6.4)
somewhat difficult to impossible	13.5 (2.9)	32.1 (4.5)	29.5 (6.4)

SOURCE: (K-SOFHE), 1995-96

NOTE: All percentages weighted. Parentheses contain certain standard errors.

Statistical differences at p≤.05

[a] Column (1) significantly different from Column (2) on this variable at p≤.05

[b] Column (2) significantly different from Column (3) on this variable at p≤.05

[c] Column (1) significantly different from Column (3) on this variable at p≤.05

Table 31
Adjusted Odds Ratio of Experiencing Difficulty Obtaining Care for Insured Children by Maternal Insurance Status and Control Variables, N=1074, 1995-96

Population Characteristics	n	Adjusted Odds Ratio	95% CI
Maternal Insurance Status[a]			
privately insured	477	1	-
Medicaid insured	409	2.68	1.02,7.02
uninsured	171	3.38	1.34,8.53
Family Poverty Status			
≤ 100% Poverty	451	1	-
101% ≤ 200% Poverty	238	0.60	0.27,1.32
≥ 200% Poverty	368	0.48	0.19,1.27
Child Gender			
male	549	1	-
female	525	1.48	0.98,2.23
Maternal Age			
17 < 25 years	150	1	-
25 < 35 years	415	0.75	0.33,1.72
35 < 50 years	460	1.29	0.57,2.92
≥ 50 years	49	0.21	0.02,2.23
Family Structure			
2 parents	548	1	-
1 parent	367	2.10	1.21,3.62
other[b]	159	0.78	0.31,1.95
Maternal Race/Ethnicity			
white, non-Hispanic[c]	672	1	-
black, non-Hispanic	243	0.47	0.21,1.04
Hispanic	159	0.56	0.26,1.20

SOURCE: K-SOFHE, 1995-96

NOTE: [a] "Other" type of health insurance was dropped from model; [b] Includes families with adult caretakers other than parents (i.e. grandparents); [c] "Other" ethnic groups have been included in "white, non-Hispanic" category.

Table 32
Pre-Post Test Comparison of Maternal Insurance Loss on Ability to Obtain Care for Children (All Children Insured), 1995-1998

		Earlier Time Difficulty Obtaining Care	Later Time Difficulty Obtaining Care	Change[a]	
Mother Lost Insurance	n=75	8.2%	14.7%	+ 6.5	p<.05
Mother Kept Insurance	n=1,209	3.9%	2.7%	- 1.2	p<.05
Difference between Groups		4.3 p=NS	12.0 p<.001		

SOURCE: K-SOFHE

NOTE: Data are unweighted; T1=Time 1; T2=Time 2.

[a] (% difficulty obtaining care at T1 - % difficulty obtaining to care at T2).

Chapter 7

Summary and Discussion

Overview

Much of the health policy discourse in the United States has focused on health insurance coverage for individuals while ignoring the broader family context. Most health care decisions, however, are made within the family, especially for children who are dependent on adult caretakers to negotiate the health care system. Due to declines in employer-based health insurance and public policy responses such as the S-CHIP that have targeted only some groups for coverage, many family members are left uninsured. The consequences of this for family use of services are unknown.

This study used the first three rounds of the Kaiser Survey of Family Health Experiences, a nationally representative survey of American families with at least one person under the age of 65 years, to address the following issues:

1. Patterns of health insurance coverage within families;
2. The relationship between health insurance coverage within families and their views of the health care system; and
3. The association between family insurance coverage and access to health care for insured and uninsured individuals, particularly children.

Summary of Significant Findings

In 1995-96, more than one-quarter of American families did not have all members covered through private, employer-based health insurance. Medicaid covered all members in about five percent of American families. Another five percent of families had members with different types of coverage including private insurance, Medicaid, or other public programs. Approximately 16 percent of all families had at least one uninsured person, but only six percent of families had all members uninsured.

Patterns of family insurance coverage were greatly determined by family structure, employment status, and income. For instance, 80 percent of two-parent families with children and 82 percent of adult only couples had private insurance for all members of the family. Only about half of single-parent families and 40 percent of "other" types of families, such as multigenerational families, had private insurance for everyone. Families with two full-time workers were much more likely to have all members privately insured than families with only one full-time worker or no full-time workers. For instance, 84 percent of families with two or more full-time workers had all members privately insured compared with 76 percent of families with one full-time worker and 27 percent with no full-time workers.

Views about the health care system varied considerably by family patterns of health insurance. Overall, families entirely insured through an employer had much more favorable views about the health care sector than families entirely insured through Medicaid or uninsured. However, the presence of an uninsured member appeared to influence family views even for families with privately insured individuals. For instance, 35 percent of families with both uninsured and privately insured members said that they worry a lot about obtaining medical care in the future compared with 19 percent of families with all members covered by private insurance. Similarly, more than half of families with both Medicaid insured and uninsured individuals said that they worried about getting medical care in the future compared with 42 percent of families entirely covered by Medicaid.

This study defined 'access' in terms of perceived ability to obtain timely health care services. Access was operationalized by a series of variables that have been found to be correlated with timely use of health services in the literature. Heterogeneity in family insurance coverage was strongly associated with many of these indicators. While the proportions of insured persons who had a usual source of care did not differ significantly between those in entirely insured families vs. those in families with some uninsured members, specific aspects of that usual source of care did. For instance, nearly a quarter of insured persons in families with uninsured family members had maintained a relationship with their usual source of care for less than one year compared with only 13 percent of insured persons in entirely insured families.

The role of maternal insurance coverage on ability to obtain care for children is of key import since many states are debating the value of extending health insurance to adult caretakers of children eligible for the state CHIP program. This study found that, independent of the child's insurance status, insurance coverage of mothers was highly predictive of ability to obtain care for children. For all insured children, just over three percent with privately insured mothers, 7.6 percent with mothers in Medicaid, and 12.2 percent with uninsured mothers experienced delay or did not obtain needed health care in the previous year. Again, for all insured children, families were 'very dissatisfied' with access to care for just over one percent with privately insured parents, 2.1 percent with Medicaid, and 9.4 percent with uninsured parents.

Specific aspects of the usual source of care was not always better for children with mothers covered by Medicaid than for insured children whose mothers had no coverage at all. For instance, two-thirds of insured children with privately insured mothers had a private physician or private clinic as their usual source of care. Only one-third, however, of insured children with mothers in Medicaid and one-half of insured children with uninsured mothers had a private physician or private clinic as their usual source of care. For insured children, 83 percent with privately insured mothers, 72 percent with mothers in Medicaid, and 69 percent with uninsured mothers had a specific physician as their usual provider of care rather than a general facility with no individually assigned provider. It was 'somewhat difficult' to 'impossible' to obtain an appointment at the insured child's usual source of care for 13.5 percent of children with privately insured mothers, 32.1 percent with mothers in Medicaid, and 29.5 percent with uninsured mothers.

Of consistently insured children whose mothers had lost health insurance coverage in Rounds 2 or 3, just over eight percent experienced difficulty obtaining needed health care prior to the loss of coverage. After the mother lost insurance, the proportion of these children who had difficulty obtaining needed health care rose to 14.7 percent, an increase of 6.5 percent ($p<.03$), despite their retaining insurance coverage themselves. Among children whose mothers retained health insurance, however, the proportion who experienced difficulty obtaining care actually declined from 3.9 percent to 2.7 percent during the same period, a statistically significant change of –1.2 percent (p<.04). At this later time, the difference in difficulty obtaining care between children whose caretakers lost insurance and those who did not had grown from a non-significant difference before the mother's loss of insurance to 12.0 percent after the loss (p<.001).

Policy Implications

This study found that greater proportions of families with some uninsured members harbored more negative views of the health care system than families with all members insured. This is particularly relevant to current outreach strategies that rely on adult family members to enroll uninsured children into publicly sponsored health insurance programs. Children are dependent on parents, particularly mothers, to seek, consent to, and participate in health programs. Mothers of uninsured children are often uninsured themselves, and they may hold negative views regarding access to and value of health care based on their own and other family members' experiences. These views may make reaching these families and convincing them of the value of timely health care more difficult.

Furthermore, policies that extend health insurance to some family members while leaving others uninsured may have the inadvertent consequence of diminishing the potential effect on access to care for the targeted population. This study found that insured persons with uninsured family members had an overall worse access profile than insured persons in families where everyone was covered. This was particularly true for children. Insured children with insured mothers were much less likely to experience difficulty in obtaining care than insured children with uninsured mothers. This has direct implications for recent incremental health insurance expansions, such as the S-CHIP, that extend health insurance to persons based on their eligibility. Focusing on total 'family' coverage might improve access to health care for not only uninsured adult family members but targeted children as well.

This study found that individuals in families entirely or partially covered by Medicaid consistently experienced more difficulty obtaining timely health care than individuals in privately insured families. While individuals in Medicaid did better on most measures than those with no insurance at all, policy efforts to increase insurance coverage might consider pooling enrollees into private insurance cooperatives instead of simply expanding Medicaid. Importantly, these findings suggest that there exists a two- or even three-tier health care sector: one for the privately insured, one for those in Medicaid, and one for the uninsured. While incremental insurance reform might reduce the number of uninsured, it does not address the disparity in ability to obtain timely care between persons enrolled in Medicaid and private insurance. "Reform" efforts that continue to perpetuate this dual system of care will inevitably fail to ensure targeted populations equitable access to health care.

Study Limitations

This study has some limitations that warrant caution in interpreting findings. First, the K-SOFHE was intended to provide a nationally representative sample, but certain subgroups such as non-English speakers, migrant workers, and homeless, were not represented in the data set. Consequently, results should not be extrapolated to these and other underrepresented groups.

Second, this study's primary dependent variable, "difficulty in obtaining needed health care," attempted to capture the individual's perceived ability to obtain health care when they or, in the case of children, their mother thought it was necessary. It is possible, however, that the more one "needs" or uses health care, the more chances they would have of experiencing difficulty obtaining care at some point. The high proportion of children in poor health status who experienced difficulty in obtaining care suggests this possibility. In fact, health status was the strongest determinant of difficulty in obtaining care when entered into a multivariate model – even more powerful than the child's insurance status. Health status, poverty, insurance coverage, usual source of care, and difficulty obtaining care were all highly correlated. More work is needed to elucidate causal pathways.

Third, the cross-sectional nature of most analyses in this study makes the inference of causal direction inappropriate. The use of all three years of data was designed to assess the family's ability to obtain needed care for continually insured children before and after their mother lost health insurance. While the comparison group of continually insured children whose mothers remained insured during the study period helped to control for certain confounding effects, these two groups were not identical. For instance, the proportion of children covered by Medicaid was greater in the group whose mothers lost insurance than in the comparison group, and they were more likely to have difficulty obtaining care for their children. When separate analyses were conducted for Medicaid and privately insured children, subpopulations who experienced difficulty in obtaining care became very small and estimates unstable. Nevertheless, there did not appear to be any difference between privately insured and Medicaid insured children in the proportion who experienced difficulty in obtaining care over time, once maternal insurance coverage was controlled.

Fourth, the content of insurance coverage or covered benefits was beyond the scope of this study. For instance, it was not possible to calculate ‘underinsurance’ or financial vulnerability to catastrophic illness. Some individuals who reported having insurance at the time of interview might have only had coverage for hospitalization, while others might have had comprehensive benefits including preventive care. Similarly, it was not possible to assess change in health insurance status between interview periods. An individual who was ‘insured’ at all three interviews might have lost insurance multiple times throughout the year.

Fifth, the K-SOFHE had a relatively high response rate (82%) at baseline. Follow-up rates were also relatively high for a longitudinal study. Nevertheless, families who refused or could not be interviewed at baseline as well as those lost to follow-up throughout the three-year study period were different than those who participated. While no data are available for those families who did not participate at baseline, analysis of panel attrition showed that families who dropped out of the study after Round 1 were generally poorer, from single parent families, and had worse overall access then families who remained in the sample. To address this problem, sample weights were adjusted every year for missing data.

Sixth, this study was limited, as are most surveys, by the use of proxy respondents. The K-SOFHE did not verify information provided by the reference person through use of other data sources. Therefore, there is no way to assess validity or reliability of the data. Nevertheless, many population estimates were comparable to other large, nationally representative surveys such as the Medical Expenditure Panel Survey (MEPS) and the National Health Interview Survey (HIS).

Directions for Future Research

Whereas this study attempted to answer very important, policy relevant questions, it also has identified areas for future research. For instance, more work is needed to understand *why* insured persons in families with uninsured members tend to have worse overall views of the health care sector and have poorer access to care than insured persons in entirely insured families. Similarly, it is not entirely clear why uninsured mothers of insured children experience greater difficulty in obtaining care for their children than insured mothers with insured children. More work is needed to better understand the role of maternal insurance status and ability to obtain care for children.

Controlling for poverty status, child and parent insurance coverage, and other sociodemographic factors, single mothers were still more likely to experience difficulty in obtaining care for children than mothers living with a partner. This finding suggests that simply providing insurance coverage to families with single mothers might not resolve inequities in access to health care.

Findings from this study bolster the argument to include uninsured adult family members in publicly sponsored health insurance initiatives. The S-CHIP legislation, however, includes language that permits states to extend health insurance coverage to uninsured family members of newly eligible children only if the state can prove the "cost-effectiveness" of its approach. Although the operational definition of cost-effectiveness has not been officially provided by the Health Care Financing Administration, it has been interpreted as “no more costly.” Since timely receipt of health care has the potential to prevent illness and deterioration of illness, the financial benefits of extending health insurance to adult family members to federal and state payors need to be assessed and taken into consideration.

APPENDIX A
REVIEW OF SELECTED STUDES ON LONGITUDINALITY
ORIGINAL ANALYTICAL STUDIES

REFERENCE (COUNTRY OF STUDY)	STUDY OBJECTIVE	LONGITUDINALITY-RELATED VARIABLE/ STUDY POPULATION / DATA SOURCE	RELEVANT FINDINGS
Baker DW; Stevens CD; Brook RH. Regular source of ambulatory care and medical care utilization by patients presenting to a public hospital emergency department. JAMA. 1994. 271;24:1909-1912. (United States)	To determine the regular source of care and the relationship between usual provider and use of medical services among ambulatory emergency department patients.	*Variable:* Self-reported regular source of care. *Study Population:* 1190 stable, ambulatory adults (not transported by ambulance) presenting to the emergency department. *Data Source:* Patient questionnaire.	Patients who identified an emergency department as their regular provider had 25% fewer physician visits than those with another regular source of care (1.8 vs 2.4; p=.003). Those with no regular source of care had 44% fewer visits than those relying on an emergency department (p=.002) and 60% fewer visits than those with a regular source of care other than an emergency department (p=.001).
Bartman BA; Moy E; D'Angelo LJ. Access to ambulatory care for adolescents: the role of a usual source of care. Journal of Health Care for the Poor and Underserved. 1997;8:214-226. (United States)	To examine whether or not adolescents saw a doctor in the event of a selected symptom and the the impact of regular source of care on utilization patterns.	*Variable:* Parent-identified regular source of care of adolescent. Study Population: All persons aged 11 through 17 years in the nationally-representative survey (N=3,102). *Data Source*: The 1987 National Medical Expenditure Survey.	Having a usual source of care was strongly related to receiving any care and symptom-related care, even after controlling for sociodemographic characteristics and health status. Lacking a usual source of care was the only variable associated with not receiving care in the event of symptoms in both bivariate and multivariate analysis.
Bindman AB; Grumbach K; Osmond D; Vranizan K; Stewart AL. Primary care and receipt of preventive services. Journal of General Internal Medicine. 1996. 11;5:269-76. (United States)	To examine whether health insurance, a regular place of care, and optimal primary care are independently associated with receiving preventive care services.	*Variable:* Regular place of care identified by respondent. *Study Population:* Probability sample of 3,846 women 18 to 64 years of age in California. *Source of Data:* Cross-sectional telephone survey.	After controlling for differences in demographics, financial status, and need for ongoing care, women who reported a regular place of care were much more likely than those without a regular place of care to receive preventive services. In fact, a regular source of care was the single most important factor associated with receipt of preventive services.

REFERENCE (COUNTRY OF STUDY)	STUDY OBJECTIVE	LONGITUDINALITY-RELATED VARIABLE/ STUDY POPULATION / DATA SOURCE	RELEVANT FINDINGS
Forrest CB; Starfield B. Entry into primary care and contintuity: the effects of access. American Journal of Public Health. 1998; 88:1330-1336. (United States)	To examine the linkages between access and care seeking with primary care physicians as sources of first contact and continuity.	*Variable:* Respondents' self-identified source of routine and sick was considered their regular source of care. All episodes that began with a visit to an individual's self-identified primary care physician were categorized as having first contact care. *Study Population:* Analyses of first-contact care were based on the 11,024 individuals (55.6%) with at least 1 acute episode of care, whereas continuity of care analyses were based on 16,145 individuals (81.4%) with at least 1 ambulatory encounter. *Data Source:* The 1987 National Medical Expenditure Survey	No after-hours care, longer office waits, and longer travel times reduced the chances of a first-contanct visit with a primary care physician for acute health problems. Longer appointment waits, no insurance, and no after-hours care were associated with lower levels of continuity.

REFERENCE (COUNTRY OF STUDY)	STUDY OBJECTIVE	LONGITUDINALITY-RELATED VARIABLE/ STUDY POPULATION / DATA SOURCE	RELEVANT FINDINGS
Freeman GK; Richards SC. Personal continuity and the care of patients with epilepsy in general practice. British Journal of General Practice. 1994. 44 (September): 395-399. (Great Britain)	To determine if there is an association between personal continuity and the perceived quality of epilepsy care received by patients. Quality in this case is operationalized by (1) discussing one or more of planned duration of therapy, stigmatization and concealment with a general practitioner in their practice; and (2) naming a general practitioner as the person they would first approach with their most important unanswered query about epilepsy.	*Variable:* Index of usual provider continuity (UPC_{12}) defined as the percentage of the 12 most recent consultations with the most frequently recorded doctor. *Study Population:* 99 epileptic patients aged 15-64 who were registered with the practice for at least two years and with at least three recorded consultations with a general practitioner. *Data Source:* Patient interview and medical record.	Continuity of doctor was *not* significantly associated with discussion of epilepsy. Similarly, ease of talking to the doctor was not associated with the personal continuity index, although more general aspects of the relationship were. It appears just as good (or as bad) to see several doctors as one doctor within the group. The authors conclude that encouraging patients with epilepsy to see the same doctor may be less important than improving doctors' communication skills and paying specific attention to the psychosocial aspects of epilepsy.

REFERENCE (COUNTRY OF STUDY)	STUDY OBJECTIVE	LONGITUDINALITY-RELATED VARIABLE/ STUDY POPULATION / DATA SOURCE	RELEVANT FINDINGS
Gill JM; Riley AW. Nonurgent use of hospital emergency departments: urgency from the patient's perspective. The Journal of Family Practice. 1996. 42;5:491-496. (United States)	To examine emergency department patients' perceptions of urgency, and to determine whether patients with no regular source of medical care are more likely to use the ED for problems they perceive as nonurgent.	*Variable*: Regular source of care was determined by asking the patient: "Where do you go for your regular medical care?" Patients who named an ED as their regular source of care were considered to have no regular source of care. *Study Population*: Non-probability sample of 268 patients in an urban ED waiting area. Patients were primarily poor African Americans. *Data Source*: Patient interviews.	Lack of a regular source of care has no significant impact on ED utilization for problems that patients perceive as nonurgent. Regardless of whether patients perceived their problem as urgent or nonurgent, only a small percentage listed absence of a regular source of care as a reason for using the emergency department.
Grumbach K; Keane D; Bindman A. Primary care and public emergency department overcrowding. American Journal of Public Health. 1993. 83;3:372-378. (United States)	The primary objective was to evaluate whether referral to primary care settings would be clinically appropriate for and acceptable to patients waiting for emergency department care for nonemergency conditions, but the authors also looked at the role of a patient having a regular source of care and appropriate utilization of the ED.	*Variable:* Regular source of care identified by patient. *Study Population:* 700 patients waiting for emergency department care in a public hospital. *Data Source:* Patient survey.	Overall, patients without a regular source of care were more likely to cite access barriers, although when patients were stratified by insurance status this effect was significant only among patients with insurance other than Medicaid. Patients with a regular source of care used the emergency department more appropriately than did patients without a regular source of care. Also, patients with a regular source of care were significantly more likely than patients without one to visit a clinic in the 1 to 2 weeks after coming to the ED. Of those patients who saw a physician in the follow-up period, 21% of the patients without a regular source of care had follow-up visits consisting exclusively of further emergency department encounters, in comparison with 8% of patients with a regular source of care.

REFERENCE (COUNTRY OF STUDY)	STUDY OBJECTIVE	LONGITUDINALITY-RELATED VARIABLE/ STUDY POPULATION / DATA SOURCE	RELEVANT FINDINGS
Haas JS; Cleary PD; Guadagnoli E; Fanta C; Epstein AM. The impact of socioeconomic status on the intensity of ambulatory treatment and health outcomes after hospital discharge for adults with asthma. Journal of General Internal Medicine. 1994. 9 (March): 121-126. (United States)	To examine the relationship between race, socioeconomic status, access to a regular source of care, intensity of therapy, and health outcomes for adults with asthma.	*Variable:* Regular source of care was a place identified by the patient where he or she usually receive medical care post-discharge. The patients who had no source of care or who were cared for only in an emergency room were considered to have no regular source of care, whereas those who received care in a clinic or a private physician's office were considered to have a regular source of care. *Study Population:* 97 patients aged 18-55 years admitted to a hospital with a primary diagnosis of asthma. *Source of Data:* Patient survey	Over one-quarter (28%) of patients with a yearly income less than $16,000 had no regular source of care, compared with 11% of those with an income from $16K to $29,999 and no patient with an income of at least $30K (p=.003). Patients with no regular source of car had significantly worse health. Although nonwhite patients were less likely to have a regular source of care, there was not difference in health outcomes by race.
Hjortdahl P. Continuity of care: general practitioners' knowledge about, and sense of responsibility toward their patients. Family Practice. 1992. 9:3-8. (Norway)	(1) To examine the relations between continuity of care and the general practitioners' accumulated knowledge about their patients; and (2) To evaluate the link between continuity of care and the doctors' sense of medical responsibility towards the patients.	*Variable:* Two aspects of longitudinal care were assessed: (1) the duration of the patient-doctor relationship, measured as the time from the first visit to the present; and (2) the density, measured as the number of consultations (office or home visits) within the last 12 months. *Study Population:* A random sample of 135 general practitioners in Norway. *Data Source:* A two-page questionnaire completed by the physician after each consultation.	More than half of the physician's accumulated knowledge is accounted for by longitudinal care. Multivariate analysis indicates that knowledge accumulates fairly slowly during the first few months of the doctor-patient relationship, increasing sharply between 3 and 12 months, then flattens out somewhat, but still increases steadily during the next few years. It takes at least one year, and usually five years or longer, to build a good or excellent knowledge base about a patient. Knowledge accumulates most rapidly during the first few contacts and the major impact of density on the accumulation of knowledge is around four or five visits a year. The physician's sense of responsibility increased more rapidly, and to a higher degree with the density of visits, than with duration of the relationship.

REFERENCE (COUNTRY OF STUDY)	STUDY OBJECTIVE	LONGITUDINALITY-RELATED VARIABLE/ STUDY POPULATION / DATA SOURCE	RELEVANT FINDINGS
Hjortdahl P; Lærum E. Continuity of care in general practice: effect on patient satisfaction. British Medical Journal. 1992. 304 (May 16): 1287-1290. (Norway)	To evaluate the influence of continuity of care on patient satisfaction with consultations.	*Variable:* Longitudinal care was noted as the duration of the relationship (time since first encounter with specific doctor) and intensity (the number of encounters with the doctor during the previous 12 months). *Study Population:* A representative sample of 3918 Norwegian primary care patients. *Data Source:* Patient survey filled out after consultation.	Multivariate analysis indicated that an overall personal patient-doctor relationship increased the odds of the patient being satisfied with the consultation sevenfold as compared with consultations where no such relationships existed. The duration of the patient-doctor relationship had a weak but significant association with patient satisfaction, while the intensity of contacts showed no such association.
Kogan MD; Alexander GR; Teitelbaum MA; Jack Brian W; Kotelchuck M; Pappas G. The effect of gaps in health insurance on continuity of a regular source of care among preschool-aged children in the United States. JAMA. 1995. 274;18:1429-1435. (United States)	To estimate the prevalence and length of gaps in health insurance coverage and their effect on having a regular source of care in a national sample of preschool-aged children.	*Variable:* Continuity of a regular source of care is measured inversely by the number of different sites that the children were taken. Children with more than two sites, and children who had two sites where the second site did not indicate possible emergency care, were considered to have more than one source of care. *Study Population:* 8129 child-mother dyads *Data Source:* 1991 Longitudinal Follow-up to the National Maternal and Infant Health Survey (NMIHS).	Children with a gap in insurance of 1 to 6 months were 47% more likely not to have had a regular source of care. Children who had a gap of greater than 6 months were 74% more likely not to have had longitudinal care than those without such a gap.

Reference (Country of Study)	Study Objective	Longitudinality-Related Variable/ Study Population / Data Source	Relevant Findings
Lambrew JM; DeFriese GH; Carey TS; Ricketts TC; Biddle AK. The effects of having a regular doctor on access to primary care. Medical Care. 1996. 34;2:138-151. (United States)	To assess the relationship between having a regular doctor and access to care, as measured by a set of preventive and primary care utilization indicators recommended by the IOM.	*Variable:* An individual's relationship with the health care system was measured by three variables related to longitudinality: (1) whether or not the individual had a regular source of care, (2) whether or not the individual had a regular doctor, and (3) the type of site of care that the individual used. Only those respondents reporting a regular source of car for 1 year or longer were defined as having a regular source of care. *Study Population:* 30,038 noninstitionalized persons in the U.S. *Data Source:* The 1987 National Medical Expenditure Survey (NMES).	Persons with any type of regular source of care had better access than those without a regular source of care. Persons with a regular doctor had better access to primary care than those with a regular site but no regular doctor. However, the apparent advantage of having a regular doctor over a regular site disappeared when only those individuals reporting a physician's office, clinic, or health maintenance organization as their regular source of care were compared.
O'Malley AS; Forrest CB. Continuity of care and delivery of ambulatory services to children in community health clinics. Journal of Community Health. 1996. 21;3:159-172. (United States)	To assess how continuity of care influences receipt of preventive care and overall levels of ambulatory care among children and adolescents in community health clinics (CHCs).	*Variable:* Continuity of care was assessed by (1) presence of a site of sick care; (2) site of routine and sick care are the same; and (3) presence of specific practitioner within site of care. *Study Population:* 1465 children and adolescents who identified CHCs as their site of routine care. Data Source: 1988 NHIS Child Health Supplement.	In logistic regression models, continuity of care was associated with nearly a two-fold increase in the odds of receiving age-appropriate preventive care. Continuity also had a positive effect on entry into the medical system within the span of a year and mean number of annual ambulatory visits.

REFERENCE (COUNTRY OF STUDY)	STUDY OBJECTIVE	LONGITUDINALITY-RELATED VARIABLE/ STUDY POPULATION / DATA SOURCE	RELEVANT FINDINGS
Rask KJ; Williams MV; Parker RM; McNagny SE. Obstacles predicting lack of a regular provider and delays in seeking care for patients at an urban public hospital. JAMA. 1994. 271;24:1931-1933. (United States)	To determine the correlation among obstacles to medical care, lack of a regular source of care, and delays in seeking care.	*Variable:* A patient had a 'regular source' of care if they identified a public or private physician or clinic where they could receive routine care. Patients who reported an emergency department or health department as their regular source of care were not considered to have a regular source of care. *Study Population:* 3897 patients who presented for acute non-appointment medical care at an urban public hospital. *Source of Data:* Hospital registration record, patient self-report and hospital financial records.	The majority (61.6%) of patients reported no regular source of care. No health insurance, no transportation, exposure to violence, and living in a supervised setting were independent predictors of lack of a regular source of care. Bivariate analysis showed that younger patients were more likely to lack a regular source of care.
Ryan SA; Millstein SG; Greene B; Irwin CE. Utilization of ambulatory health services by urban adolescents. Journal of Adolescent Health. 1996. 18 (March): 192-202. (United States)	To describe adolescents' utilization of ambulatory health services and its association with sociodemographic and health status characteristics.	*Variable:* Regular source of care identified by respondent. *Study Population:* 199 adolescents 12 to 18 years of age from urban, public middle and high schools. Their parents/guardians were also interviewed (Very low response rate–37%). *Data Source:* Telephone survey (as the third part of a larger, on-going study).	Adolescents having a regular source of care were 2.4 times more likely to have used routine medical services than those without a regular source of care. For adolescents, enabling variables such as regular source of care and health insurance are strong predictors of routine use of medical and dental care.
Sox CM; Swartz K; Burstin HR; Brennan TA. Insurance or a regular physician: which is the most powerful predictor of health care? American Journal of Public Health. 1998;883:364-370. (United States)	To compare the relative effects on access to health care of relationship with a regular physician and insurance status.	*Variable:* Regular physician identified by respondent. *Study Population:* 1952 nonretired, non-Medicare patients aged 18-64 years who presented with 1 of 6 chief complaints to 5 academic hospital emergency departments in Boston and Cambridge, MA, during a 1-month study period in 1995. *Data Source:* In person interview at emergency department and medical record review.	After controlling clinical and socioeconomic characteristics, lacking a regular physician was a stronger, more consisten predictor than insurance status of delay in seeking care. For patients with a regular physician, access was no different between the uninsured and the privately insured. For privately insured patients, those with no regular physician had worse access than those with a regular physician.

REFERENCE (COUNTRY OF STUDY)	STUDY OBJECTIVE	LONGITUDINALITY-RELATED VARIABLE/ STUDY POPULATION / DATA SOURCE	RELEVANT FINDINGS
Sweeney KG; Gray DP. Patients who do not receive continuity of care from general practitioner–are they a vulnerable group? British Journal of General Practice. 1995. 45 (March):133-135. (Great Britain)	To identify and describe a group of patients who did not receive continuity of care from the general practitioner with whom they were personally registered.	*Variable:* Continuity of care was defined as four consecutive face to face consultations with the doctor with whom the patient was registered. *Study Population:* 110 patients (71 female and 39 male) who did not receive continuity of care were compared with an age and sex matched control group who did receive continuity of care. *Data Source:* General practice medical records.	Lack of continuity of care is associated with some additional morbidity (i.e. depression, vaginal discharge, non-cardiac chest pain), an increased number of relationship problems (i.e. marital problems, parent-child relationship problems, and problems involving violence in the family), 'difficult' consultations (i.e. 30% vs 3%) and non-attendances, as well as an increase in the use of open access clinics.

References

1. Dubay L, Kenney G. Lessons from the Medicaid Expansions for Children and Pregnant Women: Implications for Current Policy. Washington, D.C. The Urban Institute; 1997.

2. U.S. General Accounting Office. Medicaid and Children's Insurance. Washington, DC: United States General Accounting Office; 1995.

3. National Governors' Association and the National Conference of State Legislatures. State Children's Health Insurance Program: Final Report. Washington, DC: National Governors' Association and the National Conference of State Legislatures; 1999.

4. Rosenbaum S, Johnson K, Sonosky C, Markus A, DeGraw C. The children's hour: the State Children's Health Insurance Program. *Health Affairs*. 1998;17:75-89.

5. Riley T, Pernice C, Mollica R. How will states implement children's health insurance programs? *Health Affairs*. 1998;17:260-263.

6. Thorpe K, Florence CS. Covering Uninsured Children and Their Parents: Estimated Costs and Number of Newly Insured. New York: The Commonwealth Fund; 1998:17.

7. Pulos V. Family Coverage Options under CHIP, The State Children's Health Insurance Program. Washington, DC: Families USA; 1998.

8. Greenberg J, Zuckerman B. State health care reform in Massachusetts. *Health Affairs*. 1997;16:188-193.

9. Guyer J, Mann C. Taking the Next Step: States Can Now Take Advantage of Federal Medicaid Matching Funds to Expand Health Insurance Coverage to Low-income Working Parents. Washington, DC: Center on Budget and Policy Priorities; 1998.

10. Kuttner R. The American health care system: Employer-sponsored health coverage. *The New England Journal of Medicine*. 1999;340:248-252.

11. Cooper PF, Schone BS. More offers, fewer takers for employment-based health insurance: 1987 and 1996. *Health Affairs*. 1997;16:142-149.

12. O'Brien E, Feder J. How Well Does the Employment-Based Health Insurance System Work for Low-Income Families? Washington, DC: Kaiser Commision on Medicaid and the Uninsured; 1998.

13. U.S. General Accounting Office. Employment-based Health Insurance: Cost Increase and Family Coverage Decreases. Washington, DC: United States General Accounting Office; 1997.

14. Schneider A, Fennel K, Long P. Medicaid Eligibility for Families and Children. Washington, DC: Kaiser Commision on Medicaid and the Uninsured; 1998.

15. Rowland D, Feder J, Keenan PS. Uninsured in America: The causes and consequences. In: Altman SH, Reinhardt UE, Shields AE, eds. *The Future U.S. Healthcare System: Who Will Care for The Poor and Uninsured?* Chicago, Il.: Health Administration Press; 1998:25-44.

16. National Governors' Association. States Enact Aggressive Child Health Insurance Outreach. Washington, DC: National Governors' Association; 1998.

17. U.S. General Accounting Office. Medicaid: Demographics of Nonenrolled Children Suggest State Outreach Strategies. Washington, DC: US GAO; 1998.

18. Selden TM, Banthin JS, Cohen JW. Medicaid's problem children: eligible but not enrolled. *Health Affairs*. 1998;17:192-200.

19. Schoen C, Lyons B, Rowland D, Davis K, Puleo E. Insurance matters for low-income adults: results from a five-state survey. *Health Affairs*. 1997;16:163-171.

20. Berk ML, Schur CL. Access to care: how much difference does Medicaid make? *Health Affairs*. 1998;17:169-180.

21. Weissman JS, Witzburg R, Linov P, Campbell EG. Termination from Medicaid: How does it affect access, continuity of care, and willingness to purchase insurance? *Journal of Health Care for the Poor and Underserved*. 1999;10:122-137.

22. Riley AW, Finney JW, Mellits ED, et al. Determinants of children's health care use: an investigation of psychosocial factors. *Medical Care*. 1993;31:767-783.

23. Cafferata GL, Kasper JD. Family structure and children's use of ambulatory physician services. *Medical Care*. 1985;23:350-360.

24. Schor E, Starfield B, Stidley C, Hankin J. Family health: utilization and effects of family membership. *Medical Care*. 1987;25:616-626.

25. Hanson KL. Is insurance for children enough? The link between parents' and children's health care use revisited. *Inquiry*. 1998;35:294-302.

26. Cutler DM, Gruber J. Medicaid and private insurance: evidence and implications. *Health Affairs*. 1997;16:194-200.

27. Levy JC. Vulnerable children: parents' perspectives and the use of medical care. *Pediatrics*. 1980;65:956-963.

28. Halfon N, Inkelas M, Wood DL, Schuster MA. Health care reform for children and families: refinancing and restructuring the U.S. child health system–chapter ten. In:

Andersen RM, Rice TH, Kominski GF, eds. *Changing the U.S. Health Care System: Key Issues in Health Services, Policy, and Management*. San Francisco: Jossey-Bass Publishers; 1996:227-254.

29. Carpenter ES. Children's health care and the changing role of women. *Medical Care*. 1980;18:1208-1218.

30. Halfon N, Inkelas M, Wood D. Nonfinancial barriers to care for children and youth. *Annual Review of Public Health*. 1995;16:447-72.

31. Horwitz SM, Morgenstern H, Berkman LF. The use of pediatric medical care: a critical review. *Journal of Chronic Diseases*. 1985;38:935-945.

32. Newacheck PW, Halfon N. The association between mothers' and children's use of physician services. *Medical Care*. 1986;24:30-38.

33. Newacheck PW. Characteristics of children with high and low usage of physician services. *Medical Care*. 1992;30:30.

34. Aday LA. Health insurance and utilization of medical care for chronically ill children with special needs: Health of our nation's children, United States, 1988. *Advance Data*. 1992;215:1-8.

35. Lieu TA, Newacheck PW, McManus MA. Race, ethnicity, and access to ambulatory care among US adolescents. *American Journal of Public Health*. 1993;83:960-965.

36. Stoddard JJ, St. Peter RF, Newacheck PW. Health insurance status and ambulatory care for children. *The New England Journal of Medicine*. 1994;330:1421-5.

37. U.S. General Accounting Office. Health Insurance: Coverage Leads to Increased Health Care Access for Children. Washington, DC: United States General Accounting Office; 1997.

38. Newacheck PW, Stoddard JJ, Hughes DC, Pearl M. Health insurance and access to primary care for children. *New England Journal of Medicine*. 1998;338:513-9.

39. Freeman HE, Aiken LH, Blendon RJ, Corey CR. Uninsured working-age adults: characteristics and consequences. *Health Services Research*. 1990;24:811-823.

40. Angel RJ, Angel JL. The extent of private and public health insurance coverage among adult Hispanics. *The Gerontologist*. 1996;36:332-340.

41. Sox CM, Swartz K, Burstin HR, Brennan TA. Insurance or a regular physician: which is the most powerful predictor of health care? *American Journal of Public Health*. 1998;88:364-370.

42. Hafner-Eaton C. Physician utilization disparities between the uninsured and insured: Comparisons of the chronically ill, acutely ill, and well nonelderly populations. *JAMA*. 1993;269:787-792.

43. Weissman JS, Gatsonis C, Epstein A. Rates of avoidable hospitalization by insurance status in Massachusetts and Maryland. *JAMA*. 1992;268:2388-2394.

44. Lurie N, Ward NB, Shapiro MF, Brook RH. Termination from Medi-Cal–does it affect health? *The New England Journal of Medicine*. 1984;311:480-484.

45. Employee Benefit Research Institute. Trends in Health Insurance Coverage. Washington, DC: EBRI; 1997.

46. U.S. General Accounting Office. Uninsured Children and Immigration, 1995. Washington, DC: United States General Accounting Office; 1997.

47. U.S. Bureau of the Census. Health Insurance Coverage–Who Had a Lapse between 1991 and 1993? . Washington, DC: U.S. Department of Commerce; 1995.

48. Fronstin P. Sources of Health Insurance and Characteristics of the Uninsured: Analysis of the March 1997 Current Population Survey. Washington, DC: Employee Benefit Research Institute; 1997.

49. Thorpe KE. Incremental approaches to covering uninsured children: design and policy issues. *Health Affairs*. 1997;16:64-78.

50. Cunningham PJ. Next Steps in Incremental Health Insurance Expansions: Who is Most Deserving? . Washington, DC: Center for Studying Health System Change; 1998.

51. Kaiser Commission on The Future of Medicaid. The Medicaid Program at a Glance. Washington, DC: The Kaiser Commission on The Future of Medicaid; 1998.

52. Holahan JF. The changing role of Medicaid. In: Altman SH, Reinhardt UE, Shields AE, eds. *The Future U.S. Healthcare System: Who Will Care for The Poor and Uninsured?* Chicago, Il.: Health Administration Press; 1998:67-85.

53. Rowland D, Salganicoff A, Keenan PSK. The key to the door: Medicaid's role in improving health care for women and children. *Annual Review of Public Health*. 1999;20:403-26.

54. Cornelius L, Beauregard K, Cohen J. Usual Sources of Medical Care and Their Characteristics. Rockville, MD: Agency for Health Care Policy and Research; 1991.

55. Margolis PA, Carey T, Lannon CM, Earp JL, Leininger L. The rest of the access-to-care puzzle. *Archives of Pediatric and Adolescent Medicine*. 1995;149:541-545.

56. Forrest CB, Starfield B. Entry into primary care and continuity: effects of access. *American Journal of Public Health*. 1998;88:1330-1336.

57. Kiefe CI, Hyman DJ. Do public clinic systems provide health care access for the urban poor? A cross-sectional survey. *Journal of Community Health*. 1996;21:61-70.

58. Hoffman C. Uninsured in America: A Chart Book. Washington, DC: The Kaiser Commission on Medicaid and the Uninsured; 1998:91.

59. Kronick R, Gilmer T. Explaining the decline in health insurance coverage, 1979-1995. *Health Affairs*. 1999;18:30-47.

60. Thorpe KE, Florence CS. Why are workers uninsured? Employer-sponsored health insurance in 1997. *Health Affairs*. 1999;18:213-218.

61. Kasper JD, Lee Y, Hoffman C. The Complexity of Health Insurance Coverage in American Families: Public Coverage, Private Coverage and Uninsured Family Members. A Report on the First Wave of the Longitudinal Kaiser Survey of Family Health Experiences. Washington, D.C.: The Henry J. Kaiser Family Foundation; 1997.

62. Swartz K, McBride TD. Spells without health insurance: distributions of durations and their link to point-in-time estimates of the uninsured. *Inquiry*. 1990;27:281-288.

63. Swartz K, Marcotte J, McBride TD. Personal characteristics and spells without health insurance. *Inquiry*. 1993;30:64-76.

64. Swartz K. All uninsured are not the same. In: Altman SH, Reinhardt UE, Shields AE, eds. *The Future U.S. Healthcare System: Who Will Care for The Poor and Uninsured?* Chicago, Il.: Health Administration Press; 1998:45-66.

65. Copeland C. Characteristics of the Nonelderly with Selected Sources of Health Insurance and Lengths of Uninsured Spells. Washington, DC: Employee Benefit Research Institute; 1998.

66. Carrasquillo O, Himmelstein DU, Woolhandler S, Bor DH. Can Medicaid managed care provide continuity of care to new Medicaid enrollees? An analysis of tenure on Medicaid. *American Journal of Public Health*. 1998;88:464-466.

67. Starfield B. Primary Care: Concept, Evaluation, and Policy. New York, New York: Oxford University Press; 1992.

68. Lambrew JM, DeFriese GH, Carey TS, Ricketts TC, Biddle AK. The effects of having a regular doctor on access to primary care. *Medical Care*. 1996;34:138-151.

69. Baker DW, Stevens CD, Brook RH. Regular source of ambulatory care and medical care utilization by patients presenting to a public hospital emergency department. *JAMA*. 1994;271:1909-1912.

70. Hayward RA, Bernard AM, Freeman HE, Corey CR. Regular source of ambulatory care and access to health services. *American Journal of Public Health*. 1991;81:434-438.

71. Kasper JD. The importance of type of usual source of care for children's physician access and expenditures. *Medical Care*. 1987;25:386-398.

72. Bartman BA, Moy E, D'Angelo LJ. Access to ambulatory care for adolescents: the role of a usual source of care. *Journal of Health Care for the Poor and Underserved*. 1997;8:214-226.

73. Weinick RM, Drilea SK. Usual Sources of Health Care and Barriers to Care, 1996. Rockville, MD: Agency for Health Care Policy and Research; 1998.

74. Rask KJ, Williams MV, Parker RM, McNagny SE. Obstacles predicting lack of a regular provider and delays in seeking care for patients at an urban public hospital. *JAMA*. 1994;271:1931-1933.

75. Kogan MD, Alexander GR, Teitelbaum MA, Jack BW, Kotelchuck M, Pappas G. The effect of gaps in health insurance on continuity of a regular source of care among preschool-aged children in the United States. *JAMA*. 1995;274:1429-1435.

76. Weigers ME, Weinick RM, Cohen JW. Children's Health 1996. Rockville, MD: Agency for Health Care Policy and Research; 1998.

77. Starfield B. Access–perceived or real, and to what? *JAMA*. 1995;274:346-7.

78. Starfield B. Primary care and health outcomes: Belgium in an international context. *Archives of Public Health*. 1995;53:477-488.

79. Starfield B. Is strong primary care good for health outcomes? In: Griffin J, ed. *The Future of Primary Care*. London: Office of Health Economics; 1995:18-29.

80. Starfield B. Health systems' effects on health status–financing vs the organization of services. *American Journal of Public Health*. 1995;85:1350-1351.

81. Starfield B. Is primary care essential? *The Lancet*. 1994;344:1129-1133.

82. Starfield B. Primary care and health: a cross-national comparison. *JAMA*. 1991;266:2268-2271.

83. Blumenthal D, Mort E, Edwards J. The efficacy of primary care for vulnerable population groups. *Health Services Research*. 1995;30:253-273.

84. IOM Institute of Medicine. Primary Care: America's Health in a New Era. Washington, DC: National Academy Press; 1996:395.

85. Bindman AB, Grumbach K, Osmond D, et al. Preventable hospitalizations and access to health care. *JAMA*. 1995;274:305-311.

86. Casanova C, Colomer C, Starfield B. Pediatric hospitalization due to ambulatory care-sensitive conditions in Valencia (Spain). *International Journal for Quality in Health Care*. 1996;8:51-9.

87. Casanova C, Starfield B. Hospitalizations of children and access to primary care: a cross-national comparison. *International Journal of Health Services*. 1995;25:283-294.

88. Parchman ML, Culler S. Primary care physicians and avoidable hospitalizations. *The Journal of Family Practice*. 1994;39:1-6.

89. Hurley RE, Freund D, Gage BJ. Gatekeeper effects on patterns of physician use. *The Journal of Family Practice*. 1991;32:167-174.

90. Hjortdahl P, Laerum E. Continuity of care in general practice: effect on patient satisfaction. *British Medical Journal*. 1992;304:1287-90.

91. Weissman JS, Stern R, Fielding SL, Epstein AM. Delayed access to health care: risk factors, reasons, and consequences. *Annals of Internal Medicine*. 1991;114:325-331.

92. Forrest CB, Starfield B. The effect of first-contact care with primary care clinicians on ambulatory care expenditures. *The Journal of Family Practice*. 1996;43:40-48.

93. Shi L. Primary care, specialty care, and life chances. *International Journal of Health Services*. 1994;24:431-458.

94. Chande VT, Kinnane JM. Role of the primary care provider in expediting care of children with acute appendicitis. *Archives of Pediatric and Adolescent Medicine*. 1996;150:703-706.

95. Weinick RM, Monheit AC. Children's health insurance coverage and family structure, 1997-1996. *Medical Care Research and Review*. 1999;56:55-73.

96. Newacheck PW, Hughes DC, Stoddard JJ. Children's access to primary care: differences by race, income and insurance status. *Pediatrics*. 1996;97:26-32.

97. Newacheck PW, Halfon N. Preventive care use by school-aged children: differences by socioeconomic status. *Pediatrics*. 1988;82:462-468.

98. Orr ST. Use of health services by black children according to payment mechanism. *Medical Care*. 1988;26:939-947.

99. Orr ST, Miller CA, James SA. Differences in use of health services by children according to race. *Medical Care*. 1984;22:848-853.

100. Short PF, Lefkowitz DC. Encouraging preventive services for low-income children: the effect of expanding Medicaid. *Medical Care*. 1992;30:766-780.

101. Starfield B. Child health care and social factors: poverty, class, race. *Bullentin of the New York Academy of Medicine*. 1989;65:299-306.

102. Guendelman S, Schwalbe J. Medical care utilization by Hispanic children: how does it differ from Black and White peers? *Medical Care*. 1986;24:925-937.

103. Guendelman S. The ethnic dilemma in children's health: class versus culture. *Border Health*. 1984:27-34.

104. Bullough B. Poverty, ethnic identity and preventive health care. *Journal of health and social behavior*. 1972;13:347-359.

105. Alexander CS, Markowitz R. Maternal employment and use of pediatric clinic services. *Medical Care*. 1986;24:134-147.

106. Wolfe BL. Children's utilization of medical care. *Medical Care*. 1980;18:1196-1207.

107. Tessler R, Mechanic D. Factors affecting children's use of physician services in a prepaid group practice. *Medical Care*. 1978;16:33-46.

108. Horwitz SM, Morgenstern H, Berkman LF. The impact of social stressors and social networks on pediatric medical care use. *Medical Care*. 1985;23:946-959.

109. Mechanic D. Effects of psychological distress on perceptions of physical health and use of medical and psychiatric facilities. *Journal of Human Stress*. 1978;4:26-32.

110. Mechanic D. Correlates of physician utilization: why do major multivariate studies of physician utilization find trivial psychosocial and organizational effects? *Journal of Health and Social Behavior*. 1979;20:387-396.

111. Mechanic D, Cleary PD, Greenley JR. Distress syndromes, illness behavior, access to care and medical utilization in a defined population. *Medical Care*. 1982;20:361-372.

112. Rosenstock IM, Kirscht JP. Why people seek health care. In: Stone GCea, ed. *Health Psychology-A Handbook*. San Francisco: Jossey-Bass Publishers; 1979:161-188.

113. Tessler R, Mechanic D. Psychological distress and perceived health status. *Journal of Health and Social Behavior*. 1978;19:254-262.

114. Tessler R, Mechanic D, Dimond M. The effect of psychological distress on physician utilization: a prospective study. *Journal of Health and Social Behavior*. 1976;17:353-364.

115. Zambrana RE, Scrimshaw SC, Collins N, Dunkel-Schetter C. Prenatal health behaviors and psychsocial risk factors in pregnant women of Mexican Origin: The role of acculturation. *American Journal of Public Health*. 1997;87:1022-1026.

116. Zambrana RE, Ell K, Dorrington C, Wachsman L, Hodge D. The relationship between psychosocial status of immigrant Latino mothers and use of emergency pediatric services. *Health and Social Work*. 1994;19:93-102.

117. Watson JM, Kemper KJ. Maternal factors and child's health care use. *Social Science and Medicine*. 1995;40:623-628.

118. Bates AS, Fitzgerald JF, Dittus RS, Wolinsky FD. Risk factors for underimmunization in poor urban infants. *JAMA*. 1994;272:1105-10.

119. Aday LA. At Risk in America: The Health and Health Care Needs of Vulnerable Populations in the United States. In: Jossey-Bass, ed. *The Jossey-Bass Health Series and The Jossey-Bass Social and Behavioral Science Series*. 1st ed. San Francisco, California: Jossey-Bass Publishers; 1993:375.

120. Altman SH, Reinhardt UE, Shields A. Health care for the poor and uninsured: an uncertain future. In: Altman SH, Reinhardt UE, Shields AE, eds. *The Future U.S. Healthcare System: Who Will Care for The Poor and Uninsured?* Chicago, Il.: Health Administration Press; 1998:1-22.

121. Cornelius LJ. Barriers to medical care for White, Black, and Hispanic American children. *Journal of the National Medical Association*. 1993;85:281-288.

122. Davis K, Gold M, Makuc D. Access to health care for the poor: does the gap remain? *Annual Review of Public Health*. 1981;2:159-82.

123. Muñoz E. Care for the Hispanic poor: a growing segment of American society. *JAMA*. 1988;260:2711-2712.

124. Newacheck PW. Access to ambulatory care for poor persons. *Health Services Research*. 1988;23:401-419.

125. Orenstein WA, Atkinson W, Mason D, Bernier RH. Barriers to vaccinating preschool children. *Journal of Health Care for the Poor and Underserved.* 1990;1:315-330.

126. St. Peter RF, Newacheck PW, Halfon N. Access to care for poor children: separate and unequal? *The Journal of the American Medical Association.* 1992;267:2760-2764.

127. Shi L. The relationship between primary care and life chances. *Journal of Health Care for the Poor and Underserved.* 1992;3:321-335.

128. Wilson RW, White EL. Changes in morbidity, disability, and utilization differentials between the poor and the nonpoor: data from the Health Interview Survey: 1964 and 1973. *Medical Care.* 1977;15:636-646.

129. Wood D, Halfon N, Sherbourne C, Grabowsky M. Access to infant immunizations for poor, inner-city families: what is the impact of managed care? *Journal of Health Care for the Poor and Underserved.* 1994;5:112-123.

130. Wood D, Hayward R, Corey C, Freeman H, Shapiro M. Access to medical care for children and adolescents in the United States. *Pediatrics.* 1990;86.

131. Andersen RM. Revisiting the behavioral model and access to medical care: does it matter? *Journal of Health and Social Behavior.* 1995;36:1-10.

132. Penchansky R, Thomas JW. The concept of access: definition and relationship to consumer satisfaction. *Medical Care.* 1981;19:127-140.

133. Institute of Medicine. Access to Health Care in America. Washington, DC: National Academy Press; 1993:229.

134. Docteur ER, Colby DC, Gold M. Shifting the paradigm: monitoring access in Medicare managed care. *Health Care Financing Review*. 1996;17:5-21.

135. Andersen RM, Davidson PL. Measuring access and trends: Chapter One. In: Andersen RM, Rice TH, Kominski GF, eds. *Changing the U.S. Health Care System: Key Issues in Health Services, Policy, and Management*. San Francisco: Jossey-Bass Publishers; 1996:13-40.

136. Andersen R. The multiple and changing faces of access. *Medical Care*. 1998;36:252-253.

137. Aday LA, Andersen R, Fleming GV. Health Care in the U.S.: Equitable for Whom? Beverly Hills: Sage Publications; 1980.

138. Urrutia-Rojas X, Aday LA. A framework for community assessment: designing and conducing a survey in a Hispanic immigrant and refugee community. *Public Health Nursing*. 1991;8:20-26.

139. Hulka BS, Wheat JR. Patterns of utilization: the patient perspective. *Medical Care*. 1985;23:438-460.

140. Aday LA. Access to what and why? Toward a new generation of access indicators. *Public Health Conference on Records and Statistics*. Washington, DC: U.S. Department of Health and Human Services; 1993:410-415.

141. Angel R, Worobey JL. Acculturation and maternal reports of children's health: evidence from the Hispanic Health and Nutrition Examination Survey. *Social Science Quarterly*. 1988;69:707-21.

142. Angel R, Worobey JL. Single motherhood and children's health. *Journal of Health and Social Behavior*. 1988;29:38-52.

143. Donabedian A. Evaluating the quality of medical care. *Milbank Quarterly*. 1966;44:166-203.

144. Donabedian A. The quality of care: How can it be assessed? *The JAMA*. 1988;260:1743-1748.

145. Donabedian A. Chapter 12: The role of outcomes in quality assessment and assurance. In: Graham NO, ed. *Quality in Health Care: Theory, Application, and Evolution*. Baltimore: Aspen Publishers, Inc.; 1995:198-209.

146. Kazandjian VA, Lawthers J, Cernak CM, Pipesh FC. Relating outcomes to processes of care: the Maryland Hospital Association's Quality Indicator Project (QI Project). *Journal of Quality Improvement*. 1993;19:530-538.

147. Simpson G, Bloom B, Cohen RA, Parsons PE. Access to Health Care. Part 1: Children. Hyattsville, MD: U.S. Department of Health and Human Services; 1997.

148. Weinick RM, Weigers ME, Cohen JW. Children's health insurance, access to care, and health status: new findings. *Health Affairs*. 1998;17:127-136.

149. Flores G, Abreu M, Olivar MA, Kastner B. Access barriers to health care for Latino children. *Archives of Pediatric and Adolescent Medicine*. 1998;152:1119-1125.

150. Flores G, Vega LR. Barriers to health care access for Latino children: A review. *Family Medicine*. 1998;30:196-205.

151. Fix ME, Tumlin K. Welfare Reform and the Devolution of Immigrant Policy. Washington, DC: The Urban Institute; 1997.

152. Ku L, Coughlin TA. How the New Welfare Reform Law Affects Medicaid. Washington, DC: The Urban Institute; 1997.

153. Koppelman J. Impact of the New Welfare Law on Medicaid. Washington, DC: National Health Policy Forum; 1997.

154. Schneider A. Overview of Medicaid Provisions in the Balanced Budget Act of 1997, P.L. 105-33. Washington, DC: Center on Budget and Policy Priorities; 1997.

155. Ellwood MR, Ku L. Welfare and immigration reforms: unintended side effects for Medicaid. *Health Affairs*. 1998;17:137-151.

156. Rosenbaum S, Darnell J. An Analysis of the Medicaid and Heatlth-Related Provisions of the Personal Responsibility and Work Opportunity Reconciliation Act of 1996 (P.L. 104-193). Washington, DC: The Kaiser Commission on the Future of Medicaid; 1997.

157. U.S. Bureau of the Census. The Nation's Hispanic Population–1994. Washington, DC: U.S. Department of Commerce; 1995.

158. Solis JM, Marks G, Garcia M, Shelton D. Acculturation, access to care and use of preventive services by Hispanics: findings from HHANES 1982-84. *American Journal of Public Health*. 1990;80:11-19.

159. U.S. Bureau of the Census. We The American Hispanics. Washington, DC: U.S. Department of Commerce; 1993.

160. U.S. Bureau of the Census. We the American Foreign Born. Washington, DC: U.S. Department of Commerce; 1993.

161. U.S. Bureau of the Census. Hispanic Americans Today. Washington, DC: U.S. Goverment Printing Office; 1993.

162. Molina C, Zambrana RE, Aguirre-Molina M. Chapter 2: The influence of culture, class, and environment on health care. In: Molina CW, Aguirre-Molina M, eds. *Latino*

Health in the U.S.: A Growing Challenge. Washington, DC: American Public Health Association; 1994:23-43.

163. Ginzberg E. Access to health care for Hispanics. *JAMA*. 1991;265:238-241.

164. Silow-Carroll S, Meyer JA, Regenstein M, Bagby N. In Sickness and in Health? The Marriage between Employers and Health Care. Washington, DC: The Economic and Social Research Institute; 1995:170.

165. de la Torre A, Friis R, Hunter HR, García L. The health insurance status of US Latino women: a profile from the 1982-1984 HHANES. *American Journal of Public Health*. 1996;86:533-537.

166. Giachello ALM. Chapter 4: issues of access and use. In: Molina CW, Aguirre-Molina M, eds. *Latino Health in the U.S.: A Growing Challenge*. Washington, DC: American Public Health Association; 1994:83-111.

167. Gottschalk P. Trends in Wages and Health Insurance Status of Less Educated Workers. Washington, D.C.: The Henry J. Kaiser Family Foundation; 1998.

168. Monheit AC, Vistnes JP. Health Insurance Status of Workers and Their Families: 1996. Rockville, MD: Agency for Health Care Policy and Research; 1997.

169. Juarbe TC. Access to health care for Hispanic women: a primary health care perspective. *Nursing Outlook*. 1995;43:23-8.

170. Hoppe SK, Heller PL. Alienation, familism and the utilization of health services by Mexican Americans. *Journal of Health and Social Behavior*. 1975;16:304-313.

171. Andersen R, Zelman Lewis S, Gioachello AL, Aday LA, Chiu G. Access to medical care among the Hispanic population of the Southwest United States. *Journal of Health and Social Behavior*. 1981;22:78-89.

172. Andersen RM, Giachello AL, Aday LA. Access of Hispanics to health care and cuts in services: a state-of-the-art overview. *Public Health Reports*. 1986;101:238-252.

173. Vega WA, Amaro H. Latino outlook: good health, uncertain prognosis. *Annual Review of Public Health*. 1994;15:39-67.

174. Wells KB, Golding JM, Hough RL, Burnam MA, Karno M. Acculturation and the probability of use of health services by Mexican Americans. *Health Services Research*. 1989;24:237-257.

175. Higginbotham JC, Treviño FM, Ray LA. Utilization of curanderos by Mexican Americans: prevalence and predictors–findings from HHANES 1982-84. *American Journal of Public Health*. 1990;80:32-35.

176. Markides KS, Levin JS, Ray LA. Determinants of physician utilization among Mexican-Americans. *Medical Care*. 1985;23:236-246.

177. Estrada AL, Treviño FM, Ray LA. Health Care Utilization Barriers among Mexican Americans: Evidence from HHANES 1982-84. *American Journal of Public Health*. 1990;80:27-31.

178. Mendoza FS. The health of Latino children in the United States. *The Future of Children*. 1994;4:43-72.

179. Wissow LS, Gittelsohn AM, Szklo M, Starfield B, Mussman M. Poverty, race and hospitalization for childhood asthma. *American Journal of Public Health*. 1988;78:777-782.

180. Newacheck PW, Stoddard JJ, McManus M. Ethnocultural variations in the prevalence and impact of childhood chronic conditions. *Pediatrics*. 1993;91:1031-1039.

181. Wood PR, Hidalgo HA, Prihoda TJ, Kromer M. Hispanic children with asthma: morbidity. *Pediatrics*. 1993;91:62-69.

182. Vadheim CM, Greenberg DP, Bordenave N, et al. Risk factors for invasive Haemophilus influenzae type b in Los Angeles County children 18–60 months of age. *American Journal of Epidemiology*. 1992;136:221-35.

183. Maternal and Child Health Bureau. Child Health USA '96-'97. Washington, DC: HRSA/DHHS; 1997.

184. Children's Safety Network. A Data Book of Child and Adolescent Injury. Washington, DC: National Center for Education in Maternal and Child Health; 1991.

185. U.S. General Accounting Office. Hispanic Access to Health Care: Significant Gaps Exist. Washington, DC: United States General Accounting Office; 1992.

186. Treviño FM, Moyer ME, Valdez RB, Stroup-Benham CA. Health insurance coverage and utilization of health services by Mexican Americans, Mainland Puerto Ricans, Cuban Americans. *JAMA*. 1991;265:233-237.

187. Treviño RP, Treviño FM, Medina R, Ramirez G, Ramirez RR. Health care access among Mexican Americans with Different Health Insurance Coverage. *Journal of Health Care for the Poor and Underserved*. 1996;7:112-121.

188. Chavez LR, Cornelius WA, Jones OW. Mexican immigrants and the utilization of U.S. health services: the case of San Diego. *Social Science and Medicine*. 1985;21:93-102.

189. Chavez LR, Cornelius WA, Jones OW. Utilization of health services by Mexican immigrant women in San Diego. *Women and Health*. 1986;11:3-20.

190. Halfon N, Wood DL, Valdez RB, Pereyra M, Duan N. Medicaid enrollment and health services access by Latino children in inner-city Los Angeles. *JAMA*. 1997;277:636-641.

191. Hubbell FA, Waitzkin H, Mishra SI, Dombrink J, Chavez LR. Access to medical care for documented and undocumented Latinos in a Southern California county. *Western Journal of Medicine*. 1991;154:414-7.

192. Valdez RB, Giachello A, Rodriguez-Trias H, Gomez P, De La Rocha C. Improving access to health care in Latino communities. *Public Health Reports*. 1993;108:534-539.

193. Cornelius LJ. Ethnic minorities and access to medical care: where do they stand? *Journal of the Association of Academic Minority Physicians*. 1993;4:16-25.

194. COSSMHO National Coalition of Hispanic Health and Human Services Organization. Meeting the health promotion needs of Hispanic communities. *American Journal of Health Promotion*. 1995;9:300-311.

195. Perez-Stable EJ, Napoles-Springer A, Miramontes JM. The effects of ethnicity and language on medical outcomes of patients with hypertension or diabetes. *Medical Care*. 1997;35:1212-1219.

196. Uba L. Cultural barriers to health care for Southeast Asian Refugees. *Public Health Reports*. 1992;107:544-548.

197. Kasper JD, Giovannini T, Lee Y, Cagney KA, Hoffman C. Serious Health Problems and Access to Care among Children and Working-Age Adults. *Unpublished manuscript*. 1998.

198. National Opinion Research Center. Survey of Family Health Experiences: Technical Document. Chicago, Il: NORC; 1997.

199. Annie E. Casey Foundation. Kids Count Data Book: State Profiles of Child Well-Being. Baltimore, MD: Annie E. Casey Foundation; 1998.

200. Weinick RM, Zuvekas SH, Drilea SK. Access to Health Care-Sources and Barriers, 1996. Rockville, MD: Agency for Health Care Policy and Research; 1997.

201. Lillie-Blanton M, Lyons B. Managed care and low-income populations: recent state experiences. *Health Affairs*. 1998;17:238-247.

202. Berk ML, Schur CL, Cantor JC. Ability to obtain health care: recent estimates from the Robert Wood Johnson Foundation National Access to Care Survey. *Health Affairs*. 1995;14:139-146.

203. Shah B, Barnwell B, Bieler G. SUDAAN User's Manual: Software for Analysis of Correlated Data, Release 6.50. Research Triangle Park, NC: Research Triangle Institute; 1995.

204. Swartz K. Interpreting the estimates from four national surveys of the number of people without health insurance. *Journal of Economic and Social Measurement*. 1986;14:233-256.

205. Wolfinger R. GLIMMIX: A SAS Macro for Fitting Generalized Linear Mixed Models Using Proc Mixed and the Output Delivery System (ODS). Cary, North Carolina: The SAS Institute; 1998.

206. SAS Institute I. SAS/STAT Software: Changes and Enhancements through Release 6.11. Cary, North Carolina: The SAS Institute, Inc.; 1996:1104.

207. Hatcher L, Stepanski EJ. A Step-by-Step Approach to Using the SAS System for Univariate and Multivariate Statistics. Cary, North Carolina: SAS Institute, Inc.; 1994:552.

208. Carrasquillo O, Himmelstein DU, Woolhandler S, Bor DH. Going bare: trends in health insurance coverage, 1989 through 1996. *American Journal of Public Health.* 1999;89:36-42.

209. Newacheck PW, Hughes DC, Cisternas M. Children and health insurance: an overview of recent trends. *Health Affairs*. 1995;14:244-254.

210. Selden TM, Banthin JS, Cohen JW. Waiting in the wings: eligibility and enrollment in the State Children's Health Insurance Program. *Health Affairs*. 1999;18:126-133.

211. Giovannini TA, Kasper JD, Hoffman C, Lee Y. Health Insurance Coverage in American Families. *Unpublished Manuscript*. 1999.

212. National Opinion Research Center. Survey of Family Health Experiences - Technical Document. Chicago, Il.: National Opinion Research Center; 1996.

213. Starfield B. Primary Care: Balancing Health Needs, Services, and Technology. New York: Oxford University Press; 1998.

214. Pett MA. Nonparametric Statistics for Health Care Research: Statistics for Small Samples and Unusual Distributions. Thousand Oaks, CA: Sage Publications; 1997.

215. Balanced Budget Act of 1997. Title XXI of the Social Security Act section 2105(c)(3).

Curriculum Vitae

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CONTACT INFORMATION

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EDUCATION

Ph.D.	The Johns Hopkins School of Hygiene and Public Health Department of Health Policy and Management Faculty: Health Services Research Concentration: Quality of Care and Health Outcomes May 1999
M.P.H.	University of California at Berkeley School of Public Health Specialization: Maternal and Child Health May 1996
M.S.W.	University of California at Berkeley School of Social Welfare Specialization: Management and Planning Field of Practice: Families and Children May 1995
B.S.	Cornell University Concentration in Applied Economics May 1992

International Study

May-June 1994	Universidad de Guadalajara Facultad de Salud Pública (School of Public Health) Guadalajara, Mexico
April 1994	Medicina Social Comunitaria Tijuana, Mexico
January 1991–January 1992	Pontificia Universidad Católica del Ecuador Quito, Ecuador
July–December 1991	L'Alliance Française Quito, Ecuador
February–June 1991	Centro de Estudos Brasileiros Quito, Ecuador
September–1990	Universidad Laica Vicente Rocafuerte Guayaquil, Ecuador
June – September 1990	Centro Nahuatli de Intercambio Linguístico Managua, Nicaragua
May 1990	Escuela Español de Quito Quito, Ecuador

ACADEMIC HONORS AND AWARDS

1999	Agency for Health Care Policy and Research (AHCPR), U.S. Department of Health and Human Services. Dissertation Fellowship Grant. $31,733. Project Title: Maternal Health Insurance and Use of Care for Children. (Declined due to previous acceptance of HCFA award)
1999	Health Care Financing Administration (HCFA), U.S. Department of Health and Human Services. Dissertation Fellowship Grant. $21,146. Project Title: Difficulty Obtaining Health Care – Does Family Health Insurance Matter?
1996-98	Agency for Health Care Policy and Research Primary Care Predoctoral Fellowship. Full scholarship + $10,000/year stipend + travel and book expenses. The Johns Hopkins University School of Hygiene and Public Health.

1998	Health Policy and Management Faculty of Health Services Research Student Conference Presentation Award. $500. The Johns Hopkins University School of Hygiene and Public Health.
1996-97	University Fellowship, University of California at Berkeley. Full scholarship + $10,000/year stipend. (University-wide merit competition – declined to pursue doctorate at Johns Hopkins)
1995-96	U.S. Public Health Service Traineeship for graduate study in maternal and child health. The University of California at Berkeley School of Public Health.
1994-95	University of California Committee on Latino Research Campus Grant. $1,030 (two competitive cycles). Project Title: Improving Health of Latino Children: Can Integrated Social Services Play a Role?
1994	Selected and fully funded for a two-month academic exchange program between the University of California at Berkeley and the University of Guadalajara, Mexico.
1993-95	Title IV-E Award for graduate study in social welfare. Full scholarship + $15,000/year stipend. U.C. Berkeley School of Social Welfare (School-wide merit competition – declined to pursue graduate work in public health).
1990-91	Cornell Tradition Award for International Study. (First undergraduate to win award traditionally reserved for graduate students). Cornell University.
1988-90	Cornell Tradition Fellowship in recognition of academic excellence and commitment to community service. Cornell University.

COMMUNITY SERVICE AWARDS (RECENT)

1999	Volunteer Service Award. Conferred by Johns Hopkins School of Public Health InterAction Program.
1998	Mayor's Community Volunteer Service Award for "exemplary commitment to public service." Conferred by Baltimore City Mayor Kurt Schmoke.
1998	Mayor's Citizen Citation for "being one of the City's most outstanding community mentors." Conferred by Baltimore City Mayor Kurt Schmoke.
1998	Big Brother of the Year. Conferred by Big Brothers Big Sisters of Central Maryland.

PROFESSIONAL EXPERIENCE

9/96 to present	*Project Director* – Primary Care Policy Center for Underserved Populations and the Health Services Research and Development Center. The Department of Health Policy and Management, Johns Hopkins School of Hygiene and Public Health, Baltimore, Maryland. Analyze and interpret statistical data of large research projects assessing access to and quality of primary care. Coordinate a multi-site research study that examines health care utilization and cost patterns of over 2 million people in different managed care plans. Manage large survey and claims data sets using the latest statistical software packages such as SAS and SPSS.
9/94 to 10/97	*Director of Development and Planning/Consultant* – Mission Neighborhood Health Center (MNHC), San Francisco, California. Secured over $6 million in funding for community oriented primary care programs. Directed annual needs assessment and supervised staff of nine. Led senior executive team and medical staff in establishing strategic goals. Built alliances with other community-based organizations and implemented a wide range of joint public health and social service programs targeting vulnerable populations.
5/95 to 10/96	*Consultant* – Family Health Outcomes Project (FHOP). The Department of Community Medicine, University of California at San Francisco School of Medicine. Analyzed health policy and scientific literature for the evaluation of health care systems serving children with special health care needs. Assist state and local departments of public health in establishing health outcome indicators for children and their families.
9/93 to 1/95	*Project Director* – Aspira Foster Family Services/Proyecto Niñez, San Francisco, California. Founded original program to meet the culturally specific physical and mental health care needs of Latino foster children. Oversaw the project's budget, public relations, and service provision.

1/93 to 9/93	*Foster Parent Trainer* – Aspira Foster Family Services, San Francisco and Oakland, California. Taught prospective foster parents effective communication skills and how to negotiate the social service/health care delivery system.
8/92 to 9/93	*Emergency Response Social Worker* – Child Protective Services, San Francisco Department of Social Services, San Francisco General Hospital, California. Coordinated out-of-home placement, medical care, and mental health services for abused and neglected children.
7/92 to 1/93	*Residential Counselor* – Seneca Center, San Leandro, California. Developed, implemented, and evaluated individualized treatment plans for severely emotionally disturbed children.
9/90 to 12/91	*Relief Worker* - La Fundación Niñez Internacional (Children International), Guayaquil and Quito, Ecuador. Provided emergency relief and support to families with children at risk of malnutrition and infectious diseases. Participated in the planning and construction of elementary schools, primary health care clinics, and hygienic infrastructure.

GRADUATE-LEVEL TEACHING EXPERIENCE

Johns Hopkins University	Course Title
Head Teaching Associate	HMOs and Managed Care, 1997-98 and 1998-99 Enrollment: 75 Graduate Students
Head Teaching Associate	Health Policy and Politics, 1997-98 and 1998-99 Enrollment: 50 Graduate Students
Teaching Associate	Introduction to Health Services Research and Evaluation, 1997-98 and 1998-99 Enrollment: 60 Graduate Students
Teaching Associate	Introduction to HMOs and Managed Care, Summer Session 1998 Enrollment 15 Graduate Students

U.C. Berkeley Extension	Course Title
Teaching Associate	Providing Services to Immigrant Children and Their Families, Summer Session 1996 Enrollment: 20 Masters-level students

Invited Lectures

Co-Guest Lecturer – February 1999	Title: Applying a Private Sector Model: How Has Medicaid Managed Care Affected Delivery of Health Services to the Poor? Attendance: 75 Department of Health Policy and Management, Johns Hopkins University, Baltimore, MD
Guest Lecturer – December 1998	Title: Measuring Access to Health Care Attendance: 60 Department of Health Policy and Management, Johns Hopkins University, Baltimore, MD
Invited Speaker – July 1998	Title: Health Services for the Medically Indigent Attendance: 50 National Youth Leadership Forum on Medicine and Public Health: Serving the Community Georgetown University, Washington, D.C.

PEER REVIEW ACTIVITIES

Reviewer, International Journal of Health Services, 1998-present

PROFESSIONAL ASSOCIATIONS

Association for Health Services Research (AHSR), 1996 to present
- Committee Member - National Conference Planning Committee, 1997

American Public Health Association (APHA), 1995 to present
California Public Health Association - North (CPHA-N), 1995 to 1996
National Association of Social Workers (NASW), 1993 to 1996

LANGUAGES

Read, write, and speak fluent Spanish
Strong foundation in French and Portuguese

PUBLICATIONS

Peer-reviewed Papers

Dievler, A., **Giovannini, T.** Community Health Centers: Promise and Performance. *Medical Care Research and Review.* 1998;55(4):432-456.

Giovannini, T. Health Care Organizations Can Do Better to Improve Access for Latino Children. *Public Health Reports* (revise and resubmit)

Giovannini, T., Kasper, J.D., Hoffman, C., Lee, Y. Health Insurance Coverage in American Families. (Submitted)

Kasper, J.D., **Giovannini, T.**, Lee, Y., Cagney, K.A., Hoffman, C. Serious Health Problems and Access to Care. (Submitted)

Giovannini, T. Ability to Obtain Health Care for Children – Does Maternal Health Insurance Matter? (in progress)

Non-refereed Reports and Manuscripts

Giovannini, T. A Primer on How to Conduct Surveys on Access to Care in Low-Income Communities. Prepared for the Bureau of Primary Health Care, U.S. Department of Health and Human Services, in collaboration with the Primary Care Policy Center for Underserved Populations, The Johns Hopkins University School of Hygiene and Public Health. (in progress)

Giovannini, T. 1997 Community Health Needs Assessment and Patient Profile. Report prepared for Mission Neighborhood Health Center, San Francisco, California, October 1997.

Giovannini, T. Barriers to Primary Care among Latino Children in a Low-Income Urban Community. Report prepared for Bureau of Primary Health Care, U.S. Department of Health and Human Services, in collaboration with the Primary Care Policy Center for Underserved Populations, The Johns Hopkins University School of Public Health, September 1997.

Dievler, A., Zema, C., **Giovannini, T.,** Hall, A. The Evolution and Impact of Publicly-funded Primary Health Care: A Review of the Literature. Report prepared for Bureau of Primary Health Care, U.S. Department of Health and Human Services, in collaboration with the Primary Care Policy Center for Underserved Populations, The Johns Hopkins University School of Public Health, August 1997.

Oliva, G., **Giovannini, T.,** Miller, P.M., Sobozinsky, I. Selecting Health Status/Outcome and Utilization Indicators in a Multicultural Environment. Family Health Outcomes Project, University of California, San Francisco, October 1996.

Giovannini, T. 1996 Community Health Needs Assessment and Patient Profile. Report prepared for Mission Neighborhood Health Center, San Francisco, California, October 1996.

Oliva, G., Milder, T., Miller, P.M., **Giovannini, T.**, Sercatz, M. Children with Special Health Care Needs: Issues and Options in Selecting Health Indicators: A Literature Review. Family Health Outcomes Project, University of California, San Francisco, September 1996.

Giovannini, T. Review of the Literature on Indicators of Asian and Pacific Islander Maternal, Child, and Adolescent Health. Report and annotated bibliography prepared for Family Health Outcomes Project, University of California, San Francisco, September 1996.

Giovannini, T. Medicaid Managed Care: Improving Health Delivery Systems to the Poor or Just Dismantling the Safety Net? Position paper prepared for Mission Neighborhood Health Center, San Francisco, California, May 1996.

Giovannini, T., Guendelman, S. Issues in Providing Services to Immigrant Children and Their Families. Report and annotated bibliography on the health status of immigrant children prepared for U.C. Berkeley Extension, Children and the Changing Family Study Program, Berkeley, California, April 1996.

Giovannini, T. Maternal and Child Health in the 21st Century: Comprehensive, Integrated and Automated Information Systems in California. Report prepared for Family Health Outcomes Project, University of California, San Francisco, November 1995.

Giovannini, T. 1995 Community Health Needs Assessment and Patient Profile. Report prepared for Mission Neighborhood Health Center, San Francisco, California, October 1995.

Giovannini, T. Determinants of Sick Care Utilization by Latino Children. Report prepared for the Chicano/Latino Policy Project, Institute for the Study of Social Change, University of California, Berkeley, May 1995.

Giovannini, T. Coordinating Health Care Services for Latino Children in Health Care: A System-wide Model for Health and Social Service Delivery. Report prepared for Proyecto Niñez/Aspira Foster Family Services, San Francisco, California, April 1994.

Giovannini, T. Health Status of Latino Children in Foster Care. Report prepared for Proyecto Niñez/Aspira Foster Family Services, San Francisco, California, December 1993.

Books

Giovannini, T. Ability to Obtain Health Care – Does Family Insurance Matter?. Doctoral Dissertation. Department of Health Policy and Management, School of Hygiene and Public Health, The Johns Hopkins University. May 1999.

PRESENTATIONS (* = PEER REVIEWED, + = INVITED)

* **Giovannini, T.** "Health Insurance Coverage among Families in the United States." Annual Conference of the Association for Health Services Research, Chicago, Il., June 29, 1999 (accepted).

* **Giovannini, T.** "Beyond Finance Reform – Improving Access at the Organizational Level." (poster) American Public Health Association Annual Meeting, Washington, D.C. November 19, 1998.

* **Giovannini, T.** "Population- and Organizational-related Barriers to Primary Care: The Case of Low-Income Latino Children in An Urban Community." (poster) Annual Conference of the Association for Health Services Research, Washington D.C., June 22, 1998.

* **Giovannini, T.** "Barriers to Primary Care among Latino Children: Opportunities for Improvement." National Association of Community Health Centers 1998 Policy Issues Forum, Washington D.C., April 7, 1998.

+ **Giovannini, T**. "Where to Focus Interventions to Improve Access to Care for Latino Families." Bureau of Primary Health Care, Department of Health and Human Services, Bethesda, Md., March 3, 1998.

+ **Giovannini, T.** "Barriers to Primary Care among Latino Children in a Low-Income Urban Community." Primary Care Policy Center Seminar Series, The Johns Hopkins University School of Public Health, Baltimore, Md., November 12, 1997.

* **Giovannini, T.** "Barriers to Primary Care among Hispanic Immigrants in California." Baltimore-Washington Primary Care Research Fellows Symposium, The Johns Hopkins University School of Medicine, Baltimore, Md., November 8, 1996.

* Oliva, G., **Giovannini, T.**, Miller, P.M., Sobozinsky, I. "Selecting Health Status/Outcome and Utilization Indicators in a Multicultural Environment." (poster) American Public Health Association Annual Meeting, New York, New York, November 18, 1996.

+ **Giovannini, T.** "Determinants of Sick Care Utilization among Latino Children." (poster) School of Social Welfare Annual Research Day, U.C. Berkeley, Berkeley, California, May 8, 1995.